

# OFFICIAL GAZETTE

## GOVERNMENT OF GOA, DAMAN AND DIU

### EXTRAORDINARY

#### GOVERNMENT OF GOA, DAMAN AND DIU

Industries and Labour Department

##### Notification

26/4/82-ILD

The following draft rules which the Government of Goa, Daman and Diu proposes to make in exercise of the powers conferred by section 112 of the Factories Act, 1948 (Central Act LXIII of 1948), are hereby published as required by section 115 of the said Act, for the information of all persons likely to be affected thereby and notice is hereby given that the said draft rules will be taken into consideration after expiry of three months from the date of publication of this notification in the Official Gazette.

All objections and suggestions to the draft may be forwarded to the Secretary, Industries and Labour Department, Government of Goa, Daman and Diu, Secretariat, Panaji, before the expiry of three months from the date of publication of this Notification in the Official Gazette.

#### DRAFT RULES

In exercise of the powers conferred by section 112 of the Factories Act, 1948 (Central Act 63 of 1948) the Government of Goa, Daman and Diu hereby makes the following rules, namely:

##### CHAPTER I

##### Preliminary

1. **Short title, extent and commencement.** — (1) These rules may be called the Goa, Daman and Diu Factories Rules, 1984.

(2) They extend to the whole of the Union territory of Goa, Daman and Diu.

(3) They shall come into force at once.

2. **Definitions.** — In these rules, unless the context otherwise requires, —

(a) "Act" means the Factories Act, 1948 (Central Act 63 of 1948);

(b) "Appendix" means an appendix appended to these rules;

(c) "Artificial humidification" means the introduction of moisture into the air of a room by any artificial means whatsoever except the unavoidable escape of steam or water vapour into the atmosphere directly due to a manufacturing process:

Provided that the introduction of air directly from outside through moistened mats or screens placed in openings at times when the temperature of the room is 80 degrees or more, shall not be deemed to be artificial humidification.

(b) "Belt" includes any driving strap or rope;

(e) "Degrees" (or temperature) means degrees on the Fahrenheit scale;

(f) "District Magistrate" includes such other official as may be appointed by the Government in that behalf;

(g) "Form" means a Form appended to these rules;

(h) "Fume" includes gas or vapour;

(i) "Government" means the Government of Goa, Daman and Diu;

(j) "Health Officer" means the Municipal Health Officer or Health Officer under the Directorate of Health Services or such other official as may be appointed by the Government in that behalf;

(k) "Hygrometer" means an accurate wet and dry bulb hygrometer conforming to the prescribed conditions as regards construction and maintenance;

(l) "Maintained" means maintained in an efficient state, in efficient working order and in good repair;

(m) "Manager" means the person responsible to the occupier for the working of the factory for the purposes of the Act;

(n) "Section" means a section of the Act.

**3. Approval of plans.** — (1) No site shall be used for the location of a factory or no building in a factory shall be constructed, re-constructed, extended or taken into use as a factory or part of a factory or any other extension of plant or machinery shall be carried out in a factory unless previous permission in writing is obtained from the Chief Inspector of Factories. Application for such permission shall be made in Form 1 which shall be accompanied by the following documents: —

(a) A flow chart of the manufacturing process supplemented by a brief description of the process in its various stages;

(b) Plans in duplicate drawn to scale showing: —

(i) the site of the factory and immediate surroundings including adjacent buildings and other structures, roads, drains, etc.;

(ii) the plan, elevation and necessary cross-section of the various buildings, indicating all relevant details relating to natural lighting, ventilation and means of escape in case of fire. The plans shall also clearly indicate the position of the plant and machinery, aisles and passage ways; and

(c) Such other particulars as the Chief Inspector may require:

Provided that the provisions of the above sub-rule (1) shall also apply to (a) any factory which was either in existence on the date of commencement of the Act or which has not been constructed or extended since then.

(b) Where any inflammable solvent for the extraction of oil from oil-cakes, oil-seeds or any other material is to be or intended to be used, handled or treated in any manner in any process which may be conducted in any factory, application for such permission shall also be accompanied by a no objection certificate in respect of the site of the factory from the local authority concerned and from an officer not below the rank of Town Planner in Directorate of Town Planning in charge of the area appointed by the Government in this behalf.

(2) If the Chief Inspector is satisfied that the plans are in consonance with the requirements of the Act, he shall, subject to such conditions as he may specify, approve them by signing and returning to the applicant one copy of each plan or he may call for such other particulars as he may require to enable such approval to be given:

Provided that no such approval shall be given in respect of the site of any factory referred to in the proviso to sub-rule (1) unless the Chief Inspector of Factories and the District Magistrate concerned have personally visited the site of the factory and have approved the same, and in case of any difference of opinion among the authorities regarding the location of the plant, the matter shall be referred to the Government for decision:

Provided further that no place shall be disapproved unless the applicant is given an opportunity to be heard and the Chief Inspector or as the case may be, the Government has recorded its reasons in that behalf.

**4. Prohibition of use of a premises as a factory without a valid licence.** — No occupier of a factory shall use any premises as a factory or carry on any manufacturing process in a factory except under a licence obtained or renewed in respect of such premises in accordance with the provisions of these rules.

**5. Certificate of Stability.** — No manufacturing process shall be carried on in any building of a factory constructed, reconstructed or extended, or in any building which has been taken into use as a factory or part of a factory until a certificate of stability, signed by a competent person, in respect of that building in the form given below has been sent by the occupier or manager of the factory to the Chief Inspector, and accepted by him.

#### Form of Certificate of stability

1. Name of the factory ...
2. Village, town and district in which the factory is situated ...
3. Full postal address of the factory ...
4. Name of the occupier of the factory ...
5. Nature of manufacturing process to be carried on in the factory ...
6. Number of floors on which workers will be employed ...
7. Nature and amount of moving power ...

I certify that I have personally inspected the building/buildings the plans of which have been approved by the Chief Inspector in his letter No. ... dated ... and examined the various parts including the foundations with special reference to the machinery, plant, etc., that have been installed. I am of the opinion that the building/buildings which has/have been constructed/reconstructed/extended/taken into use is/are in accordance with the plans approved by the Chief Inspector in his letter mentioned above, that it/they is/are structurally sound and that its/their stability will not be endangered by its/their use as a factory/part of a factory for the manufacture of ... for which the machinery, plant, etc. installed are intended.

Signature ...

Signature of the Occupier  
Date ...

Name in block letters ...

Qualification ...

Address ...

Date ...

If employed by a company or association, name and address of the company or association

**NOTE:** The person giving the certificate must be —

(a) A corporate Member of the Institution of Civil Engineers, or

- (b) A corporate Member of the Institution of structural Engineers, or
- (c) A Fellow, Associate or Licentiate of the Royal Institute of British Architects, or
- (d) Be a graduate of Civil Engineering and also be a corporate member of the Institute of Engineers (India).

provided that no person, except in the case of a building occupied or erected by any Government where a certificate may be granted by an officer not below the rank of an Executive Engineer, shall be authorised to sign the certificate of stability if he is in the full time employment of the owner or the builder of the building concerned.

#### 6. Application for registration and grant of licence.

— (1) The occupier or manager of every factory coming within the scope of this Act after its commencement shall submit to the Chief Inspector an application in triplicate in Form 2 for the registration of the factory accompanied by an application in Form 3 for the grant of licence therefore:

Provided that the occupier or manager of a place to which the provisions of the Act are made applicable by a notification under section 85 of the Act shall submit an application within 30 days of the date of that notification.

(2) Every such application shall be accompanied by a treasury receipt or an invoice for book adjustment, as the case may be, for payment of the fees prescribed for the purpose as specified in the Schedule below: —

#### SCHEDULE

##### Scale of fees payable for licence and annual renewal of licence by factories

Quantity of H. P. installed (Maximum H. P.)	Maximum number of persons to be employed on any day during the year									
	Upto 20	From 21 to 50	From 51 to 100	From 101 to 250	From 251 to 500	From 501 to 750	From 751 to 1,000	From 1,001 to 1,500	From 1,501 to 2,000	From 2001 and above
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1. Nil	25	50	100	250	400	500	750	1,000	1,500	1,750
2. Up to 10	50	150	250	400	600	800	1,000	1,500	2,000	2,500
3. Above 10 but not above 50	100	250	400	600	800	1,250	1,500	2,000	2,500	3,000
4. Above 50 but not above 100	250	350	600	800	1,250	1,500	2,000	2,500	3,000	3,500
5. Above 100 but not above 250	350	500	800	1,250	1,500	2,000	2,500	3,000	3,500	4,000
6. Above 250 but not above 500	500	750	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500
7. Above 500 but not above 750	750	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000
8. Above 750 but not above 1000	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500
9. Above 1000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500	6,000

Provided that —

(i) fees to be charged for the following classes of factories shall, subject to a minimum of rupees five, be half of those specified above, if they do not work for more than 180 days in the aggregate in a calendar year: —

- (a) Gur Factories,
- (b) Cashewnut Factories,
- (c) Rice Mills.

(ii) in the case of other factories working for a part of the year and commencing work on or after 1st day of July, the fees to be charged for the first time shall, subject to a minimum of rupees five, be half of those specified in the Schedule aforesaid.

7. **Grant of licence.** — The Chief Inspector may, on application being made to him under sub-rule (1) of rule 6 and on payment of the fees prescribed in sub-rule (2) of that rule and on being satisfied that there is no objection to the grant of licence applied for, register the factory and grant a licence in Form 4 to the applicant to use as factory such premises as are specified in the application and subject to compliance with such conditions as are specified in the licence:

Provided that, subject to the provisions of sub-section (3) of Section 6, the Chief Inspector may

refuse to register the factory and grant a licence if he is satisfied —

(i) that an application is not accompanied by plans —

(a) of the site on which the factory is to be situated; and

(b) for the construction or extension of the factory;

(ii) that the plans so submitted have not been approved by the Chief Inspector;

(iii) that the factory has not been constructed in accordance with the plans approved by the Chief Inspector or in compliance with the conditions subject to which the plans are approved;

(iv) that material requirements of the relevant provisions specified in the Schedules to rule 131 in relation to the factory concerned have not been complied with; or

(v) that there is imminent danger to life in the factory due to explosive or inflammable dust, gas or fumes, and effective measures in his opinion have not been taken to remove the danger.

(2) Subject to the provisions hereinafter contained with respect to suspension and unless earlier renewed under rule 9, every such licence shall remain in force until the 31st day of December of the year for which the licence is granted, or renewed under rule 9.

**8. Amendment of licence.** — (1) A licence under rule 6 may be amended by the Chief Inspector.

(2) A licensee shall be required to have his licence amended if there is change in the name of the factory or in the site on which the factory is situated or if the factory, for which the licence is granted, exceeds the limits specified in the licence in regard to horse-power or the number of persons employed. The licensee whose licence is required to be amended shall submit it to the Chief Inspector with an application stating the nature of the amendment and reasons thereof:

Provided that no amendment of the licence shall be necessary in respect of changes in the number of workers or horse-power or both unless such changes involve higher licence or renewal fee.

(3) Where a licence is required to be amended under sub-rule (2) the fee to be paid for such amendment shall be equal to the difference between the licence or renewal fees due on the basis of the higher number of workers and horse power and the fees for the grant of licence or renewal thereof already paid for the year or part thereof.

**9. Renewal of licence.** — (1) An application for the renewal of licence shall be made to the Chief Inspector in Form 3 accompanied by a treasury receipt or an invoice for book adjustment, as the case may be, for payment of the fees specified in the Schedule attached to rule 6(2), so as to reach him not later than two months before the date on which the licence is due to expire:

Provided that where a factory commences work on or after the 1st day of November in any year, application for renewal of the licence shall be made on or before the 1st day of January next following.

(2) (a) On receipt of the application under sub-rule (1), the Chief Inspector may, if he is satisfied that there is no objection to the renewal of the licence, renew the same for a period not exceeding one year or may, after recording his reasons, refuse the renewal thereof on any of the grounds specified in the proviso to sub-rule (1) of rule 7.

(b) The Chief Inspector may also refuse the renewal of the licence on the ground that the applicant has been guilty of repeated contraventions of the provisions of the Act or these rules or both, or the applicant has obtained the licence by fraud or by misrepresentation:

Provided that, in any case falling under clause (a) or (b), before refusing any licence, the applicant shall be given an opportunity to show cause why the licence should not be refused:

Provided further that, where the application for the renewal of the licence is made after the expiry of the due date specified in sub-rule (1), it may be renewed on payment of an additional fee of 25 per cent of the fee payable for the renewal of the licence.

**10. When licence deemed to be granted or renewed.** — Where application for the grant or for renewal of licence is duly made in accordance with these rules, the factory in respect of which the licence is to be granted or renewed, as the case may be, shall be deemed to be duly licensed until such licence is

granted or renewed or until an intimation that the grant or renewal of the licence has been refused is communicated to such person.

*Explanation:* — For the purpose of this rule, an application for the grant or renewal of a licence shall be deemed to have been duly made only if it is in the prescribed form and is filled in with all relevant particulars and further is accompanied by a treasury receipt or an invoice for book adjustment, as the case may be, for payment of the fees in accordance with the Schedule annexed to rule 6.

**11. Procedure on death or disability of licensee.** —

(1) If a licensee dies or becomes insolvent, the person carrying on the business of such licensee shall not be liable to any penalty under the Act for exercising the powers granted to the licensee by the licence during such time as may reasonably be required to allow him to make an application for the amendment of the licence under rule 8 in his own name for the unexpired portion of the original licence.

(2) *Transfer of licence.* — (i) The holder of a licence may, at any time before the expiry of the licence, apply for permission to transfer his licence to another person.

(ii) Such application shall be made to the Chief Inspector who shall, if he approves of the transfer, enter upon the licence, under his signature, an endorsement to the effect that the licence has been transferred to the person named.

(iii) A fee of ten rupees shall be charged on each such application.

**12. Loss of licence.** — (1) Where a licence granted under these rules is lost or destroyed, a duplicate thereof may be granted on payment of a fee of rupees five.

(2) The Chief Inspector may require a licensee to obtain a duplicate licence on payment of rupees five, if the original licence is defaced or spoiled:

Provided that, the Chief Inspector may issue a duplicate licence without charge if he is satisfied that there are good and sufficient reasons for doing so.

**13. Mode of payment of fees.** — (1) Every application under these rules shall be accompanied by a treasury receipt showing that the appropriate amount of fee has been paid into the local treasury under the head of account "087 — Labour and Employment, C-Fees realised under Factories Act, 1948".

Provided that, in the case of a Government factory, the payment of the appropriate amount of fees shall be made in the same manner as payments of amounts due by one Government Department to another are ordinarily made.

(2) If an application for the grant, renewal or amendment of a licence is rejected, the fee paid shall be refunded to the applicant.

(3) Where such application is granted, any amount paid by the applicant in excess of the prescribed fee shall be refundable only after the expiry of one year from the date of such grant or the same may be



adjusted against payment of any fees due for the next succeeding year.

**14. Suspension of licence on request of licensee. —**

(1) If before the 31st October of any year an occupier notifies his intention in writing to the Chief Inspector that during the following year the premises in respect of which licence is issued will not be used for the working of the factory, the Chief Inspector may suspend the licence granted in respect of such factory.

(2) A licence suspended under sub-rule (1) may be revived on receipt of an application for renewal in Form 3 accompanied by the licence, for the remaining part of the year, on payment of a surcharge of 10 per cent in addition to the fees specified in these rules.

Form prescribed under sub-section (1) of section 7.

**15. Notice of occupation. —** The notice of occupation shall be in Form 2.

**16. Notice of change of manager. —** Notice of change of manager shall be in Form 5.

## CHAPTER II

### THE INSPECTING STAFF

Rule prescribed under sub-section (1) of Section 8:

**17. Appointment of Inspectors. —** No person shall be appointed as Inspector for the purposes of the Act, unless he possesses the qualifications as prescribed for such Inspectors by any general or special order of the Government at the time of his appointment.

Rules prescribed under Section 9:

**18. Powers of Inspectors. —** An Inspector shall, for the purpose of the execution of the Act, have power to do all or any of the following things, that is to say: —

(a) to photograph any worker, to inspect, examine, measure, copy, photograph, sketch or test, as the case may be, any building or room, any plant, machinery, appliance or apparatus; any register or document or anything provided for the purpose of securing the health, safety or welfare of the workers employed in a factory;

(b) in the case of an Inspector who is a duly qualified medical practitioner to carry out such medical examinations as may be necessary for the purposes of his duties under the Act;

(c) to prosecute, conduct or defend before a Court any complaint, or other proceeding arising under the Act or in discharge of his duties as an Inspector:

Provided that the powers of the Additional Inspectors shall, unless otherwise expressly provided in the notification under sub-section (5) of Section 8, be limited to the inspection of factories in respect of the following matters, namely: —

Cleanliness (Section 11), over-crowding (Section 16), lighting (Section 17), drinking water (Section 18), latrines and urinals (section 19), spittoons (section 20), precautions in the case of

fire (section 38), welfare (Chapter V), working hours of adults (Chapter VI — except the power of exemption under the proviso to section 62), employment of young persons (Chapter VII), leave with wages (Chapter VIII) and display of notice (section 108):

Provided further that all Additional Inspectors shall report the defects found and remedies suggested for enforcing compliance with requirements of sections referred to above, to the Chief Inspector who shall pass final orders in each case.

Rule prescribed under sub-section (4) of Section 10:

**19. Duties of Certifying Surgeon. —** (1) For the purposes of the examination and certification of young persons who wish to obtain certificates of fitness, the Certifying Surgeon shall arrange a suitable time and place for the attendance of such persons, and shall give previous notice in writing of such arrangements to the manager of factories situated within the local limits assigned to him.

(2) The Certifying Surgeon shall issue his certificates in Form 6. The foil and counterfoil shall be filled in and the signature or the left thumb impression of the person in whose name the certificate is granted shall be taken on them. On being satisfied as to the correctness of the entries made therein and of the fitness of the person examined, he shall sign the foil and initial the counterfoil and shall deliver the foil to the person in whose name the certificate is granted. The foil so delivered shall be the certificate of fitness granted under section 69. All counterfoils shall be kept by the Certifying Surgeon for a period of at least 2 years after the issue of the certificate.

(3) If a certificate of fitness issued to a young person is lost, on receipt of an application for the grant of a duplicate, the Certifying Surgeon, after making such enquiries as he deems fit, may grant a duplicate thereof. Such application shall be forwarded through the occupier of the factory where the young person is employed.

(4) (a) A fee of rupee one shall be payable for the issue of every certificate of fitness issued under sub-rule (2) and shall be paid by the occupier;

(b) A fee of fifty paise shall be payable for the issue of every duplicate of a certificate issued under sub-rule (2) and shall be paid by the occupier.

(5) The Certifying Surgeon shall, upon request by the Chief Inspector, carry out such examination and furnish him with such report as he may indicate, for any factory or class or description of factories where —

(a) cases of illness have occurred which it is reasonable to believe are due to the nature of the manufacturing process carried on or other conditions of work prevailing therein; or

(b) by reason of any change in the manufacturing process carried on, or in the substances used therein, or by reasons of the adoption of any new manufacturing process or of any new substance for use in a manufacturing process, there is a likelihood of injury to the health of workers employed in that manufacturing process; or

(c) young persons are, or are about to be, employed in any work which is likely to cause injury to their health.

(6) For the purpose of the examination of persons employed in processes covered by the rules relating to dangerous operations, the Certifying Surgeon shall visit the factories within the local limits assigned to him at such intervals as are prescribed by the rules relating to such dangerous operations.

(7) At such visits the Certifying Surgeon shall examine the persons employed in such processes and shall record the results of his examination in a register known as the health register (Form 7) which shall be kept by the factory manager and produced to the Certifying Surgeon at each visit.

(8) If the Certifying Surgeon finds as a result of his examination that any person employed in such process is no longer fit for medical reasons to work in that process, he shall suspend such person from working in that process for such time as he may think fit and no person after suspension shall be employed in that process without the written sanction of the Certifying Surgeon in the health register.

(9) The manager of a factory shall afford to the Certifying Surgeon facilities to inspect any process in which any person is employed or is likely to be employed.

(10) The manager of a factory shall provide for the purpose of any medical examination which the Certifying Surgeon wishes to conduct at the factory (for his exclusive use on the occasion of an examination) a room which shall be properly cleaned and adequately ventilated and lighted and furnished with a screen, a table (with writing materials) and chairs.

### CHAPTER III

#### HEALTH

Exemptions under sub-section (2) of Section II:

20. **Cleanliness of walls and ceilings.**—(1) Clause (d) of sub-section (1) of section 11 of the Act shall not apply to the class or description of the factories or parts of factories specified in the Schedule hereto:

Provided that they are kept in a clean state by washing, sweeping, brushing, dusting, vacuum-cleaning or other effective means:

Provided further that the said clause (d) shall continue to apply—

(i) as respects factories or parts of factories specified in Part A of the said Schedule, to work-rooms in which the amount of cubic space allowed for every person employed in the room is less than 15 cu. metres;

(ii) as respects factories or parts of factories specified in Part B of the said Schedule, to work-rooms in which the amount of cubic space allowed for every person employed in the room is less than 75 cu. metres;

(iii) to engine-houses, fitting-shops, lunch-rooms, canteens, shelters, creches, cloak rooms, rest-rooms and wash-places; and

(iv) to such parts of walls, sides and tops of passages and staircases as are less than six metres above the floor or stair.

(2) If it appears to the Chief Inspector that any part of a factory, to which by virtue of sub-rule (1) any of the provisions of the said clause (d) do not apply, or apply as varied by sub-rule (1), is not being kept in a clean state, he may by written notice require the occupier to white-wash or colour-wash, wash, paint or varnish the same and in the event of the occupier failing to comply with such requisition within two months from the date of the notice, sub-rule (1) shall cease to apply to such part of factory, unless the Chief Inspector otherwise determines.

#### SCHEDULE

##### PART—A

Blast furnaces.

Brick and tile works in which unglazed bricks or tiles are made.

Cement works.

Chemical works.

Gas works.

Iron and steel mills.

Stone, slate and marble works.

The following parts of factories:—

Rooms used only for the storage of articles.

Rooms in which the walls or ceilings consist of galvanised iron, glazed bricks, glass, slate, asbestos, bamboo, thatch.

Parts in which dense steam is continuously evolved in the process.

Parts in which pitch, tar or like material is manufactured or is used to a substantial extent, except in brush works. The parts of a glass factory known as the glass house. Rooms in which graphite is manufactured or is used to a substantial extent in any process.

Parts in which coal, coke, oxide or iron, ochre, lime or stone is crushed on ground.

Parts of walls, particulars, ceilings or tops of rooms which are at least seven metres above the floor.

Ceilings or tops of rooms in print works, bleach works or dye works with the exception of finishing rooms or warehouses.

Inside walls of oil mills below a height of 1.5 metres from the ground floor level. Inside walls in tanneries below a height of 1.5 metres from the ground floor level where a wet process is carried on.

##### PART—B

Coach and motor body works.

Electric generating or transforming stations.

Engineering works.

Factories in which sugar is refined or manufactured.

Foundries other than foundries in which brass casting is carried on.

Ship-building works.

Those parts of factories where unpainted or unvarnished wood is manufactured.

Register prescribed under sub-section (1) of Section 11:

21. **Record of white-washing, etc.** — The record of dates on which white-washing, colour-washing, varnishing, etc., are carried out shall be entered in a register maintained in Form 8.

Rule prescribed under sub-section (1) of Section 11 and Section 12:

22. **Compound to be kept clean.** — The compound surrounding every factory shall be maintained in a sanitary and clean condition free of rubbish, filth or debris.

Rule prescribed under sub-section (2) of Section 12:

23. **Disposal of trade wastes and effluents.** — (1) In the case of a factory where the drainage system is proposed to be connected to the public sewerage system, prior approval of the arrangements made shall be obtained from the local authority.

(2) In the case of factories other than those mentioned in sub-rule (1), prior approval of the arrangements made for the disposal of trade wastes and effluents shall be obtained from the Public Health authorities or such authority as the State Government may appoint in this behalf.

Rule prescribed under Section 13:

24. **Ventilation and temperature.** — (1) In any factory the maximum wet-bulb temperature of air in a work-room at a height of 1.5 metres above the floor level shall not exceed 30 degrees centigrade and adequate air movement of at least 30 metres per minute shall be provided; and in relation to dry-bulb temperature, the wet-bulb temperature in the workroom at the said height shall not exceed that shown in the Schedule annexed hereto, or as regards a dry-bulb reading intermediate between the two dry-bulb readings, that specified in relation to the higher of these two dry-bulb readings:

#### SCHEDULE

Dry-bulb temperature	Wet-bulb temperature
30°C to 34°C	29°C
35°C to 39°C	28.5°C
40°C to 44°C	28°C
45°C to 47°C	27.5°C

Provided that if the temperature measured with a thermometer inserted in a hollow globe of 15 centimetres diameter coated mat black outside and kept in the environment for not less than 20 minutes exceeds the dry-bulb temperature of air, the temperature so recorded by the globe thermometer shall be taken in place of the dry-bulb temperature:

Provided further that when the reading of the wet-bulb temperature outside in the shade exceeds 27 degrees centigrade, the value of the wet-bulb temperature allowed in the Schedule for a given dry-bulb temperature may be correspondingly exceeded to the same extent:

Provided further that this requirement shall not apply in respect of factories covered by section 15 in respect of factories where the nature of work carried on involves production of excessively high temperature referred to in clause (ii) of sub-section (1) to which workers are exposed for short periods of time

not exceeding one hour followed by an interval of sufficient duration in thermal environments not exceeding those otherwise laid down in this rule:

Provided further that the Chief Inspector, having due regard to the health of the workers, may in special and exceptional circumstances, by an order in writing exempt any factory or part of a factory from the foregoing requirement, in so far as restricting the thermal conditions within the limits laid down in the Schedule are concerned, to the extent he may consider necessary subject to such conditions as he may specify.

(2)(a) If it appears to the Inspector that in any factory, the temperature of air in a workroom is sufficiently high and is likely to exceed the limits prescribed in sub-rule (1), he may serve on the manager of the factory an order requiring him to provide sufficient number of whirling hygrometers or any other type of hygrometers and direct that the dry-bulb and wet-bulb readings in each such workroom shall be recorded at such positions as approved by the Inspector, twice during each working shift by a person especially nominated for the purpose by the manager and approved by the Inspector.

(b) If the Inspector has reason to believe that a substantial amount of heat is added inside the environment of a workroom by radiation from walls, roof or other solid surroundings, he may serve on the manager of the factory an order requiring him to provide one or more globe thermometers referred to in the first proviso in sub-rule (1) and further requiring him to place the globe thermometers at places specified by him and keep a record of the temperatures in a suitable register.

(3)(a) In every factory the amount of ventilating openings in a workroom below the eaves shall, except where mechanical means of ventilation as required by clause (b) below are provided, be of an aggregate area of not less than 15% of the floor area and shall be so located as to afford a continued supply of fresh air:

Provided that the Chief Inspector may relax the requirements regarding the amount of ventilating openings if he is satisfied that having regard to the location of the factory, orientation of the workroom, prevailing winds, roof height and the nature of manufacturing process carried on, sufficient supply of fresh air into the workroom is afforded during most of the part of the working time:

Provided further that this requirement shall not apply in respect of workrooms of factories —

(i) covered by section 15; or

(ii) in which temperature and humidity are controlled by refrigeration.

(b) Where in any factory owing to special circumstances such as situation which respect to adjacent buildings and height of the building with respect to floor space, the requirements of ventilation openings under clause (a) of this sub-rule cannot be complied with or in the opinion of the Inspector the temperature of air in a workroom is sufficiently high and is likely to exceed the limits prescribed in sub-rule (1), he may serve on the manager of the factory an order requiring him to provide additional

ventilation either by means of roof ventilators or by mechanical means.

(c) The amount of fresh air supplied by mechanical means of ventilation in an hour shall be equivalent to at least six times the cubic capacity of the workroom and shall be distributed evenly throughout the workroom without dead airpockets or undue droughts—caused by high inlet velocities.

(d) In regions where in summer (15th March—15th July) dry-bulb temperatures of outside air in the shade during most part of the day exceed 35 degrees centigrade and simultaneous wet-bulb temperatures are 25 degrees centigrade or below and in the opinion of the Inspector the manufacturing process carried on in the workroom of a factory permits thermal environments with relative humidity of 50% or more, the Inspector may serve on the manager of the factory an order to have sufficient supply of outside air for ventilation cooled by passing it through water sprays either by means of unit type of evaporative air coolers (desert coolers) or, where supply of outside air is provided by mechanical means through ducts in a plenum system, by means of central air washing plants.

Rules 25 to 35 prescribed under sub-section (I) of Section 15:

25. When artificial humidification not allowed.— There shall be no artificial humidification in any room of a cotton spinning or weaving factory—

(a) by the use of steam during any period when the dry-bulb temperature of that room exceeds 29.5 degrees centigrade; and

(b) at any time when wet-bulb reading of the hygrometer is higher than that specified in the following Schedule in relation to the dry-bulb reading of the hygrometer at that time; or as regards a dry-bulb reading intermediate between any two dry-bulb readings indicated consecutively in the Schedule when the dry-bulb reading does not exceed the wet-bulb reading to the extent indicated in relation to the lower of these two dry-bulb readings:—

SCHEDULE

Reading in degrees centigrade					
Dry-bulb	Wet-bulb	Dry-bulb	Wet-bulb	Dry-bulb	Wet-bulb
15.5	14.5	25.0	24.0	34.5	30.0
16.0	15.0	25.5	24.5	35.0	30.5
16.5	15.5	26.0	25.0	35.5	31.0
17.0	16.0	26.5	25.5	36.0	31.0
17.5	16.0	27.0	26.0	36.5	31.5
18.0	16.5	27.5	26.0	37.0	31.5
18.5	17.0	28.0	26.5	37.5	31.5
19.0	18.0	28.5	27.0	38.0	32.0
19.5	18.5	29.0	27.0	38.5	32.0
20.0	19.0	29.5	28.0	39.0	32.0
20.5	19.5	30.0	28.0	39.5	32.5
21.0	20.0	30.5	28.5	40.0	32.5
21.5	20.5	31.0	28.5	40.5	33.0
22.0	21.0	31.5	29.0	41.0	33.0

Reading in degrees centigrade					
Dry-bulb	Wet-bulb	Dry-bulb	Wet-bulb	Dry-bulb	Wet-bulb
22.5	21.0	32.0	29.0	41.5	33.0
23.0	21.5	32.5	29.0	42.0	33.0
23.5	22.0	33.0	29.5	42.5	33.0
24.0	23.0	33.5	29.5	43.0	33.5
24.5	23.5	34.0	30.0	43.5	33.5

Provided, however, that clause (b) shall not apply when the difference between the wet-bulb temperature as indicated by the hygrometer in the department concerned and the wet-bulb temperature taken with a hygrometer outside in the shade is less than 2 degrees.

26. Provision of hygrometer.— In all departments of cotton spinning and weaving mills wherein artificial humidification is adopted, hygrometers shall be provided and maintained in such positions as are approved by the Inspector. The number of hygrometers shall be regulated according to the following scale:—

(a) Weaving department—

One hygrometer for departments with less than 500 looms, and one additional hygrometer for every 500 or part of 500 looms in excess of 500.

(b) Other departments—

One hygrometer for each room of less than 8500 cubic metres capacity and one extra hygrometer for each 5670 cubic metres or part thereof, in excess of this.

(c) One additional hygrometer shall be provided and maintained outside each cotton spinning and weaving factory wherein artificial humidification is adopted, and in a position approved by the Inspector, for taking hygrometer shade readings.

27. Exemption from maintenance of hygrometers.

— When the Inspector is satisfied that the limits of humidity allowed by the Schedule to rule 25 are never exceeded, he may, for any department other than the weaving department, grant exemption from the maintenance of the hygrometer. The Inspector shall record such exemption in writing.

28. Copy of Schedule to rule 25 to be affixed near every hygrometer.— A legible copy of the Schedule to rule 25 shall be affixed near each hygrometer.

29. Temperature to be recorded at each hygrometer.— At each hygrometer maintained in accordance with rule 26, correct wet and dry-bulb temperatures shall be recorded thrice daily during each working day by competent persons nominated by the manager and approved by the Inspector. The temperature shall be taken between 7 a.m. and 9 a.m., between 11 a.m. and 14 p.m. (but not in the rest interval) and between 16 p.m. and

17.30 p.m. In exceptional circumstances, such additional readings and between such hours as the Inspector may specify, shall be taken. The temperature shall be entered in Humidity Register in Form 9, maintained in the factory. At the end of each month, the persons who have taken the readings shall sign the Register and certify in the Register the correctness of the entries. The register shall always be available for inspection by the Inspector.

**30. Specifications of hygrometer.**—(1) Each hygrometer shall comprise of two mercurial thermometers of wet-bulb and dry-bulb of similar construction, and equal in dimensions, scale and divisions of scale. They shall be mounted in a frame with a suitable reservoir containing water.

(2) The wet-bulb shall be closely covered with a single layer of muslin, kept wet by means of a wick attached to it and dropping into the water in the reservoir. The muslin covering and the wick shall be suitable for the purpose, clean and free from size or grease.

(3) No part of the wet-bulb shall be within 76 millimetres from the dry-bulb or less than 25 millimetres from the surface of the water in the reservoir and the water reservoir shall be below it, on the side of it away from the dry-bulb.

(4) The bulb shall be spherical and of suitable dimensions and shall be freely exposed on all sides to the air of the room.

(5) The bores of the stems shall be such that the position of the top of the mercury column shall be readily distinguishable at a distance of 60 centimetres.

(6) Each thermometer shall be graduated so that accurate readings may be taken between 10 and 50 degrees centigrade.

(7) Every degree from 10 degrees upto 50 degrees shall be clearly marked by horizontal lines on the stem, each fifth degree shall be marked by longer marks than the intermediate degrees and the temperature marked opposite each fifth degree, i.e. 10, 15, 20, 25, 30, 35, 40, 45, 50.

(8) The markings as above shall be accurate, that is to say, at no temperature between 10 and 50 degrees shall the indicated readings be in error by more than one ninth of a degree.

(9) A distinctive number shall be indelibly marked upon the thermometer.

(10) The accuracy of each thermometer shall be certified by the National Physical Laboratory, Delhi, or some competent authority appointed by the Chief Inspector and such certificate shall be attached to the humidity register.

**31. Thermometers to be maintained in efficient order.**—Each thermometer shall be maintained at all times during the period of employment in efficient working order, so as to give accurate indications and in particular—

(a) the wick and the muslin covering of the wet-bulb shall be renewed once a week;

(b) the reservoir shall be filled with water which shall be completely renewed once a day. The Chief Inspector may direct the use of distilled water or pure rain water in any particular mill or mills in certain localities; and

(c) no water shall be applied directly to the wick or covering during the period of employment.

**32. Inaccurate thermometer not to be used without fresh certificate.**—If an Inspector gives notice in writing that a thermometer is not accurate, it shall not, after one month from the date of such notice, be deemed to be accurate unless and until it has been re-examined as prescribed and a fresh certificate obtained which certificate shall be kept attached to the humidity register.

**33. Hygrometer not to be affixed to wall, etc. unless protected by wood.**—(1) No hygrometer shall be affixed to a wall, pillar, or other surface unless protected therefrom by wood or other non-conducting material of at least 12 millimetres in thickness and at a distance of at least 25 millimetres from the bulb of each thermometer.

(2) No hygrometer shall be fixed at a height of more than 170 centimetres from the floor to the top of thermometer stem or in the direct draughts from a fan, window or ventilating opening.

**34. No reading to be taken within 15 minutes of renewal of water.**—No reading shall be taken for record on any hygrometer within 15 minutes of the renewal of water in the reservoir.

**35. How to introduce steam for humidification.**—In any room in which steam pipes are used for the introduction of steam for the purpose of artificial humidification of the air, the following provisions shall apply:—

(a) the diameter of such pipes shall not exceed 50 millimetres and in the case of pipes installed after 1st day of January 1950, the diameter shall not exceed 25 millimetres;

(b) such pipes shall be as short as are reasonably practicable;

(c) all hangers supporting such pipes shall be separated from the bare pipes by an efficient insulator not less than half an inch in thickness;

(d) no uncovered jet from such pipe shall project more than 11.5 centimetres beyond the outer surface of any cover;

(e) the steam pressure shall be as low as practicable and shall not exceed 5 kilograms per square centimetre; and

(f) the pipe employed for the introduction of steam into the air in a department shall be effectively covered with such non-conducting material, as may be approved by the Inspector in order to minimise the amount of heat radiated by them into the department.

Rules 36 to 40 prescribed under Sub-section (4) of Section 17.

**36. Lighting application and commencement.**—Subject to the provisions as contained hereunder, rules 36 to 40 shall apply to factories in which

persons are being regularly employed in a manufacturing process or processes for more than 48 hours a week, or in shifts, provided that nothing in these rules shall be deemed to require the provision of lighting of a specified standard in any building or structure so constructed that, in the opinion of the Chief Inspector, it would not be reasonably practicable to comply with such requirement.

**37. Lighting of interior parts.**— (1) The general illumination over those interior parts of a factory where persons are regularly employed shall be not less than 65 lux measured in the horizontal plane at a level of 90 cms. above the floor.

Provided that in any such parts in which the mounting height of the light source or general illumination necessarily exceeds 7.6 metres measured from the floor or where the structure of the room or the position or construction of the fixed machinery or plant prevents the uniform attainment of this standard, the general illumination at the said level shall be not less than 22 lux and where work is actually being done the illumination shall be not less than 65 lux.

(2) The illumination over all other interior parts of the factory over which persons employed pass shall, when and where a person is passing, be not less than 5 lux at floor level.

(3) (i) In every factory, where natural lighting is not such that day light conditions are fairly uniform over the working or other areas and/or day-light illumination is not sufficient, additional lighting, which shall be of uniform level, widely distributed to avoid hard shadows or strong contrast and free from direct or reflected glare, shall be provided. The minimum intensity of illumination for the different areas and work-rooms of the type given under column No. 2 shall be as given under column No. 3 of the Schedule 'A' appended hereto;

(ii) Notwithstanding the above, in every factory, where intense local lighting is further necessary on account of the nature of work as mentioned in the column No. 2 of the Schedule 'B' appended hereto, the same shall be obtained by a combination of general lighting and supplementary lighting at the point of work. The minimum intensity of illumination for different tasks shall be as given under column No. 4 of the said Schedule.

(iii) In case of any doubt or dispute in regard to the classification of areas or tasks specifically mentioned in Schedule 'A' or corresponding to the examples mentioned in Schedule 'B' respectively, the decision of the Chief Inspector of Factories shall be final.

#### SCHEDULE 'A'

Sr. No.	Areas and work-room	Minimum intensity of illumination in Lux
1.	Stock-yards, main entrance and exit roads, cat-walks of outdoor plants, coal unloading and storage areas.	20
2.	Passage-ways, corridors and stairways, warehouses, stock-rooms for large and bulky materials, platforms or outdoor plants, basements.	50
3.	Engine and boiler rooms, passengers and freight elevators, conveyers crating and boxing departments, store-rooms and stock-rooms for medium and fine materials, lockers rooms, toilet and wash rooms.	100

#### SCHEDULE

Sr. No.	Nature of work	Examples	Minimum intensity of illumination in Lux
1	2	3	4
1.	Where discrimination of detail is not essential	Handling of material of coarse nature, rough sorting, grinding of clay products, handling coal or ashes.	50
2.	Where slight discrimination detail is essential	Production of semifinished iron and steel products, rough assembling, milling of grains, opening, carding, drawing, slubbing, roving, spinning (ordinary) counts of cotton.	100
3.	Where moderate discrimination of detail is essential	Medium assembling, rough bench work and machine work, inspection and testing of products, canning, sewing, veneering planning of lumber, sewing of light coloured textiles and leather products, weaving light thread, warping, slashing doubling (fancy) spinning fine counts.	200



1	2	3	4
4.	Where close discrimination of details is essential	Medium bench and machine work 300 fine testing, flour grading, leather finishing, weaving cotton goods or light coloured woolen goods, welding sub-assembly, drilling, rivetting, book-binding and folding.	300
5.	Where discrimination of fine detail is involved under a fair degree of contract for long periods of time.	Fine assembling, fine bench and machine work, fine inspection, fine polishing and bevelling of glass, fine wood working, weaving dark coloured woolen goods.	500
6.	Where discrimination of extremely fine detail is involved under conditions of extremely poor contrast for long periods of time.	Extra fine assembling, extra fine inspection, testing of extra fine instruments, jewellery and watch manufacturing, grading and working of tobacco products, dark cloth hand tailoring, final perching in dye works, make-up and proof-reading in printing plants.	1,000

(4) The standard specified in this rule shall be without prejudice to the provision of any additional illumination required to render the lighting sufficient and suitable for the nature of the work.

**38. Prevention of glare.** — (1) Where any source of artificial light in the factory is less than 4.9 metres above floor level, no part of the light source or of the lighting fitting having a brightness greater than 1.55 candles per sq. centimetre shall be visible to persons whilst normally employed within 30 metres of the source except where the angle of elevation from the eye to the source or part of the fitting, as the case may be exceeds 20°.

(2) Any local light, that is to say, an artificial light designed to illuminate particularly the area or part of the area of work of a single operative or small group of operatives working near each other, shall be provided with a suitable shade of opaque material to prevent glare or with other effective means by which the light source is completely screened from the eyes of every person employed at a normal working place, or shall be so placed that no such person is exposed to glare therefrom.

**39. Power of Chief Inspector to exempt.** — Where the Chief Inspector is satisfied in respect of any particular factory or part thereof or in respect of any description of workroom or process that any requirement of rules 37 and 38 is inappropriate or is not reasonably practicable, he may by order in writing exempt the factory or part thereof, or description of workroom or process from such requirement to such extent and subject to such conditions as he may specify.

**40. Exemption from rule 37.** — (1) Nothing in rule 37 shall apply to the parts of factories specified in Part I of the Schedule annexed hereto.

(2) Nothing in sub-rule (1) of rule 37 shall apply to the factories or parts of factories respectively specified in Part II of the said Schedule.

## SCHEDULE

### PART I

Parts of factories in which light sensitive photographic materials are made or used in an exposed

condition or where such exposing operations are carried on.

### PART II

Cement works.

Works for the crushing and grinding of limestone.

Gas works.

Coke oven works.

Electrical stations.

Flour mills.

Maltings and breweries.

Parts of factories in which the following processes are carried on: —

Concrete or artificial stone making.

Conversion of iron into steel.

Smelting of iron ore.

Iron or steel rolling.

Hot rolling or forging, tempering or annealing of metals.

Glass blowing and other working in molten glass.

Tar distilling.

Petroleum refining and blending.

Rules 41 to 46 prescribed under Sub-section (1) of Section 18.

**41. Quantity of drinking water.** — The quantity of drinking water to be provided for the workers in every factory shall be at least five litres a day per worker employed in the factory and such drinking water shall be readily available at all times during working hours.

**42. Source of supply.** — The water provided for drinking shall be supplied —

(a) from the taps connected with a public water supply system, or

(b) from any other source approved in writing by the Health Officer.

**43. Storage of water.** — If drinking water is not supplied directly from taps either connected with public water supply system or any other water supply system of the factory approved by the Health Officer, it shall be kept in suitable vessels, receptacles or tanks fitted with taps and having dust

proof covers, and placed on raised stands or platforms in shade and having suitable arrangement of drainage to carry away the waste water. Such vessels, receptacles or tanks shall be kept clean and the water renewed at least once every day. All practicable measures shall be taken to ensure that the water is free from contamination.

**44. Cleanliness of wells or reservoir.**— (1) Drinking water shall not be supplied from any open well or reservoir unless it is so constructed, situated, protected and maintained as to be free from the possibility of pollution by chemical or bacterial and extraneous impurities.

(2) Where drinking water is supplied from such well or reservoir the water in it shall be sterilized once a week or more frequently if the Inspector by written order so requires, and the date on which sterilising is carried out shall be recorded:

Provided that this requirement shall not apply to any such well or reservoir if the water therein is filtered and treated to the satisfaction of the Health Officer before it is supplied for consumption.

**45. Report from Health Officer.**— The Inspector may by order in writing, direct the manager to obtain, at such time or at such intervals as he may direct, a report from the Health Officer as to the fitness for human consumption of the water supplied to the workers and in every case to submit to the Inspector a copy of such report as soon as it is received from the Health Officer.

**46. Water Centres.**— In every factory wherein more than 250 workers are ordinarily employed—

(a) the drinking water supplied to the workers shall from the 1st of November of every year to 31st May of the succeeding year be cooled by ice or other effective method:

Provided that if ice is placed in the drinking water, the ice shall be cleaned and wholesome and shall be obtained only from a source approved in writing by the Health Officer.

(b) (i) the cooled drinking water shall be supplied in every canteen, lunch-room and rest-room and also at conveniently accessible points throughout the factory which for the purpose of these rules shall be called "Water Centres".

(ii) at least one such water centre shall be provided on each floor if the factory has more than one floor;

(c) the "Water Centres" shall be sheltered from the weather and adequately drained;

(d) (i) the number of "Water Centres" to be provided shall be one "Water Centre" for every 150 workers or part thereof employed at any one time in the factory.

Provided that in the case of a factory where the number of persons employed exceeds 500, it shall be sufficient if there is one "Water Centre" as aforesaid for every 150 persons up to the first 450 and one for every 450 persons or part thereof thereafter, and in counting the number, account

shall be taken of the maximum number of workers working at any time during the day.

(ii) where drinking water is provided through taps or through drinking fountains each "Water Centre" shall have at least three such taps or fountains. The taps or fountains shall be at least 60 cms. apart, and shall have a trough to drain away the waste water. The trough and the walls and platform near the tap shall be laid in glazed tiles;

Provided that where mechanical refrigerating units with drinking water fountains distributed throughout the factory, are provided, the number of "Water Centres" may not be according to the standards prescribed under sub-clause (i) above, as long as the total number of fountains provided is in accordance with the prescribed standard that is the number of "Water Centres" as prescribed in sub-clause (i) were provided;

(e) (i) every "Water Centre" shall be maintained in a clean and orderly condition;

(ii) every "Water Centre" shall be in charge of a suitable person who shall distribute the water and who shall be provided with clean clothes while on duty:

Provided that in respect of factories where mechanical refrigerating units and taps are provided to the satisfaction of the Chief Inspector, he may exempt such a factory on an application made by the manager from the provisions of sub-clause (ii) on such conditions as he may deem fit.

Rules 47 to 56 prescribed under Sub-section (3) of Section 19.

**47. Latrine accommodations.**— Latrine accommodation shall be provided in every factory on the following scale:—

(a) where females are employed, there shall be at least one latrine for every 25 females;

(b) where males are employed, there shall be at least one latrine for every 25 males:

Provided that where the number of males employed exceeds 100, it shall be sufficient if there is one latrine for every 25 males upto the first 100, and one for every 50 thereafter.

In calculating the number of latrines required under this rule, any odd number of workers less than 25 or 50, as the case may be, shall be reckoned as 25 or 50 and the number of workers to be considered shall be the maximum number employed at any time during the day.

**48. Privacy of latrines.**— Every latrine shall be under cover and so partitioned off as to provide privacy, and shall have a proper door and fastenings.

**49. Sign-boards to be displayed.**— Where workers of both sexes are employed, there shall be displayed outside each latrine block a notice in the language understood by the majority of the workers "For Men Only" and "For Women Only", as the case may be. The notice shall also bear the figure of a man or of a woman, as the case may be.

**50. Urinal accommodation.**—Urinal accommodation shall be provided for the use of male workers and there shall be at least one urinal of not less than 60 centimetres in length for every 50 males:

Provided that where the number of males employed exceeds 500, it shall be sufficient if there is one urinal for every 50 males upto the first 500 employed, and one for every 100 thereafter.

In calculating the urinal accommodation required under this rule, any odd number of workers less than 50 or 100 as the case may be, shall be reckoned as 50 or 100.

**51. Latrines and urinals to conform to public health requirements.**—Latrines and urinals other than those connected with an efficient water borne sewage system, shall comply with the requirements of the Public Health Authorities.

**52. Certain latrines and urinals to be connected to sewerage system.**—When any general system of underground sewage with an assured water supply for any particular locality is provided in a municipality, all latrines and urinals of a factory situated in such locality shall, if the factory is situated within 30 metres of an existing sewer, be connected with that sewerage system.

**53. White-washing, colour-washing of latrines and urinals.**—The walls, ceiling and partition of every latrine and urinal shall be white-washed or colour-washed and the white-washing or colour-washing shall be repeated at least once in every four months. The dates on which the white-washing or colour-washing is carried out shall be entered in the prescribed register in Form 8:

Provided that this rule shall not apply to latrines and urinals, the walls, ceilings or partitions of which are laid in glazed tiles or otherwise finished to provide a smooth, polished impervious surface and that they are washed with suitable detergents and disinfectants at least once in every four months.

**54. Construction and maintenance of drains.**—All drains carrying waste or sullage water shall be constructed in masonry or other impermeable material and shall be regularly flushed and the effluent disposed off by connecting such drains with a suitable drainage line:

Provided that, where there is no such drainage line, the effluent shall be deodorized and rendered innocuous and then disposed off in a suitable manner to the satisfaction of the Health Officer.

**55. Water taps in latrines.**—(1) Where piped water supply is available, a sufficient number of water taps, conveniently accessible, shall be provided in or near such latrine accommodation.

(2) If piped water supply is not available, sufficient quantity of water shall be kept stored in suitable receptacles near the latrines.

**56. Number of Sweepers.**—In every factory employing number of workers in any shift as shown in column no. 2 of the Schedule appended hereto, there shall be employed at least a number of full time/part time sweepers as shown in column no. 3

of the said Schedule in the respective shift to clean the latrines, urinals and wash places provided in the factory for the use of the workers employed in that shift, in order to maintain the same in clean and sanitary condition at all times.

#### SCHEDULE

Sr. No.	No. of workers in the shift	No. of sweepers to be employed in the shift
1.	Up to 100	1 part time
2.	Above 100 but not above 250	1 full time
3.	Above 250 but not above 500	2 full time
4.	Above 500 but not above 1000	3 full time
5.	Above 1000	3 full time plus one full time for every additional 500 or part thereof.

Rules 57 to 59 prescribed under sub-section (2) of section 20.

**57. Number and location of spittoons.**—The number and location of the spittoons to be provided shall be to the satisfaction of the Inspector. Such spittoons shall be placed on a stand or a bracket 90 centimetres high.

**58. Type of spittoons.**—The spittoons shall be of either of the following types:—

(a) a galvanised iron container with a conical funnel-shaped cover. A layer of suitable disinfectant liquid shall always be maintained in the container; or

(b) a container filled with dry, clean sand, and covered with a layer of bleaching powder; or

(c) any other type approved by the Chief Inspector.

**59. Cleaning of spittoons.**—The spittoons mentioned in clause (a) of rule 58 shall be emptied, cleaned and disinfected at least once every day; a spittoon mentioned in clause (b) of rule 58 shall be cleaned by scrapping out the top layer of sand as often as necessary or at least once every day.

#### CHAPTER IV SAFETY

Further precautions prescribed under Sub-Section (2) of Section 21.

**60. Further safety precautions.**—Without prejudice to the provisions of sub-section (1) of Section 21 in regard to the fencing of machines, the further precautions specified in the Schedules annexed hereto shall apply to the machines noted in each Schedule.

## SCHEDULE I

Textile Machinery except Machinery used in Jute Mills

1. *Application.*—The requirements of this Schedule shall apply to machinery in factories engaged in the manufacture or processing of textiles other than jute textiles. The Schedule would not apply to machinery in factories engaged exclusively in the manufacture of synthetic fibres.

2. *Definitions.*—For the purposes of this Schedule—

(a) "Calender" means a set of heavy rollers mounted on vertical side frames and arranged to pass cloth between them. Calenders may have two to ten rollers, or bowls, some of which can be heated.

(b) "Embossing calender" means a calender with two or more rolls, one of which is engraved for producing figure effects of various kinds on a fabric.

(c) "Card" means a machine consisting of cylinders of various sizes—and in certain cases flats—covered with card clothing and set in relation to each other so that fibres in staple form may be separated into individual relationship. The speed of the cylinders and their direction of rotation varies. The finished product is delivered as a silver. Cards of different types are: the revolving flat card, the roller-and-clearer card, etc.

(d) "Card clothing" means the material with which the surfaces of the cylinder, doffer, flats, etc. of a card are covered and consists of a thick foundation material made of either textile fabrics through which are pressed many fine closely spaced, specially bent wires or mounted saw toothed wire.

(e) "Comber" means a machine for combing fibres of cotton wool, etc. The essential parts are device for feeding forward a fringe of fibres at regular intervals and an arrangement of combs or pins, which, at the right time, pass through the fringe. All tangled fibres, short fibres and nips are removed and the long fibres are laid parallel.

(f) "Combing machinery" means a general classification of machinery including combers, silver lap machines, ribbon lap machines, and gill boxes, but excluding cards.

(g) Rotary staple "cutter" means a machine consisting of one or more rotary blades used for the purpose of cutting textile fibres into staple lengths.

(h) "Garnett machine" means any of a number of types of machines for opening hard twisted waste of wool, cotton, silk, etc. Essentially, such machines consist of a licker-in; one or more cylinders, each having a complement worker and stripper rolls; and a fancy roll and doffer. The action of such machines is somewhat like that of a wool card, but it is much more severe in that the various rolls are covered with garnett wire instead of card clothing.

(i) "Gill box" means a machine used in the worsted system of manufacturing yarns. Its

function is to arrange fibres in parallel order. Essentially, it consists of a pair of feed rolls and a series of followers where the followers move at a faster surface speed and perform a combing action.

(j) "In-running rolls" means any pair of rolls or drums between which there is a "nip".

(k) "Interlocking arrangement" means a device that prevents the setting in motion of a dangerous part of a machine or the machine itself while the guard, cover or door provided to safe guard against danger is open or unlocked and which will also hold the guard, cover or door closed and locked while the machine or the dangerous part is in motion.

(l) "Kier" means a large metal vat, usually a pressure type, in which fabrics may be boiled out, bleached, etc.

(m) "Ribbon lapper" means a machine or a part of a machine used to prepare laps for feeding a cotton comb; its purpose is to provide a uniform lap in which the fibres have been straightened as much as possible.

(n) "Sliver lapper" means a machine or a part of a machine in which a number of parallel card slivers are drafted slightly, laid side by side in a compact sheet, and wound into a cylindrical package.

(o) "Loom" means a machine for effecting the interlocking of two series of yarns crossing one another at right angles. The warp yarns are wound on a warp beam and pass through headles and reeds. The filling is shot across in a shuttle and settled in place by reeds and slay, and the fabric is wound on a cloth beam.

(p) "Starch mangle" means a mangle that is used specifically for starching cotton goods. It commonly consists of two large rolls and a shallow open vat with several immersion rolls. The vat contains the starch solution.

(q) "Water mangle" means a calendar having two or more rolls used for squeezing water from fabrics before drying. Water mangles also may be used in other ways during the finishing of various fabrics.

(r) "Mule" means a type of spinning frame having a head stock and a carriage as its two main sections. The head stock is stationery. The carriage is movable and it carries the spindles which draft and spin the roving into yarn. The carriage extends over the whole width of the machine and moves slowly towards and away from the head stock during the spinning operation.

(s) "Nip" is the danger zone between two rolls or drums which by virtue of their positioning and movement create a nipping hazard.

(t) "Openers and pickers" means a general classification of machinery which includes breaker pickers, intermediate pickers, finisher pickers, single process pickers, multiple process pickers, willow machines card and picker waste cleaners, thread extractors, shredding machines, roving waste openers, shoddy pickers, bale breakers, feeders, vertical openers, lattice cleaners, horizontal cleaners and any similar machinery equip-

ped with either cylinders, screen section calender section, rolls, or beaters used for the preparation of stock for further processing.

(u) "Paddler" means a trough for a solution and two or more squeeze rolls between which cloth passes after being passed through a mordant or dye bath.

(v) "Plaiting machine" means a machine used to lay cloth into folds of regular length for the purpose of subsequent process or use.

(w) "Roller printing machine" means a machine consisting of a large central cylinder, or pressure bowl, around the lower part of the perimeter of which is placed a series of engraved color rollers (each having a color trough), a furnisher roller, doctor blades, etc. The machine is used for printing fabrics.

(x) "Continuous bleaching range" means a machine for bleaching of cloth in rope or open-width form with the following arrangement. The cloth, after wetting out, pass through a squeeze roll into a saturator containing a solution of caustic soda and then to an enclosed J-Box. A V-shaped arrangement is attached to the front part of the J-box for uniform and rapid saturation of the cloth with steam before it is packed down in the J-box. The cloth, in a single strand rope form, passes over a guide roll down the first arm of the "V" and up the second. Steam is injected into the "V" at the upper end of the second arm so that the cloth is rapidly saturated with steam at this point. The J-box capacity is such that cloth will remain hot for a sufficient time to complete the scouring action. It then passes a series of washers with a squeeze roll in between. The cloth then passes through a second set of saturator, J-box and washer, where it is treated with the peroxide solution. By slight modification of the form of the unit, the same process can be applied to open-width cloth.

(y) "Mercerizing range" means a 3-bowl mangle, a tenter frame, and a number of boxes for washing and scouring. The whole set up is in a straight line and all parts operate continuously. The combination is used to saturate the cloth with sodium hydroxide, stretch it while saturated and washing out most of the caustic before releasing tension.

(z) "Sanforizing machine" means a machine consisting of a large steam-heated cylinder and endless, thick, woollen felt blanket which is in close contact with the cylinder for most of its perimeter, and an electrically heated shoe which presses the cloth against the blanket while the latter is in a stretched condition as it curves around the feed-in roll.

(aa) "Shearing machine" means a machine used for shearing cloth. Cutting action is provided by a number of steel blades spirally mounted on a roller. The roller rotates in close contact with a fixed ledger blade. There may be one to six such rollers on a machine.

(bb) "Singeing machine" means a machine which comprises of a heated roller, plate or an open gas flame. The cloth or yarn is rapidly passed over the roller or the plate or through the open gas flame to remove fuzz or hairiness by burning.

(cc) "Slasher" means a machine used for applying a size mixture to warp yarns. Essentially, it consists of a stand for holding section beams, a size box, one or more cylindrical dryers or an enclosed hot air dryer, and a beaming end for winding the yarn on the loom beams.

(dd) "Tenter frame" means a machine for drying cloth under tension. It essentially consists of a pair of endless travelling chains fitted with clips of fine pins and carried on tracks. The cloth is firmly held at the selvages by the two chains which diverge as they move forward so that the cloth is brought to the desired width.

(ee) "Warper" means a machine for preparing and arranging the yarns intended for the warp of a fabric, specifically, a beam warper.

3. *General safety requirements.* — (1) Every textile machine shall be provided with individual mechanical or electrical means for starting and stopping such machines. Belt shifter on machines driven by belts and shafting should be provided with a belt shifter lock or an equivalent positive locking device.

(2) Stopping and starting handles or other controls shall be of such design and so positioned as to prevent the operator's hand or fingers from striking against any moving part or any other part of the machine.

(3) All belts, pulleys, gears, chains, sprocket wheels and other dangerous moving parts of machinery which either form part of the machinery or are used in association with it, shall be securely guarded.

4. *Openers and pickers.* — (1) In all opening or picker machinery, beaters and other dangerous parts shall be securely fenced by suitable guards so as to prevent contact with them. Such guards and doors or covers of openings giving access to any dangerous part of the machinery shall be provided with interlocking arrangement:

Provided that in the case of doors or covers of openings giving access to any dangerous part, other than beater covers, instead of the interlocking arrangement, such openings may be so fenced by guards which prevent access to any such dangerous part and which is either kept positively locked in position or fixed in such a manner that it cannot be removed without the use of hand tools.

(2) The feed rolls on all opening and picking machinery shall be covered with a guard designed to prevent the operator from reaching the nip while the machinery is in operation.

(3) The lap forming rollers shall be fitted with a guard or cover which shall prevent access to the nip at the intake of the lap roller and fluted roller as long as the weighted rack is down. The guard or cover shall be so locked that it cannot be raised until the machine is stopped and the machine cannot be started until the cover or guard is closed.

Provided that the foregoing provision shall not apply to the machines equipped with automatic lap forming devices.

Provided further that any such machine equipped with an automatic lap forming device shall not be

used unless the automatic lap forming device is in efficient working order.

5. *Cotton cards.* — (1) All cylinder doors shall be secured by an interlocking arrangement which shall prevent the door being opened until the cylinder has ceased to revolve and shall render it impossible to restart the machine until the door has been closed:

Provided that the latter requirement in respect of the automatic locking device shall not apply while stripping or grinding operations are carried out:

Provided further that stripping or grinding operations shall be carried out only by specially trained adult workers wearing tight fitting clothing whose names have been recorded in the register prescribed in this behalf as required under sub-section (1) of Section 22.

(2) The lick-in shall be guarded so as to prevent access to the dangerous parts.

(3) Every card shall be equipped with an arrangement that would enable the card cylinder to be driven by power during stripping/grinding operations without having to either shift the main belt to the fast pulley of the machine or to dismantle the interlocking mechanism. Such an arrangement shall be used only for stripping or grinding operations.

6. *Garnett machines.* — (1) Garnett lick-in shall be enclosed.

(2) Garnett fancy rolls shall be enclosed by guards. These shall be installed in a way that keeps workers rolls reasonably accessible for removal or adjustment.

(3) The underside of the garnett shall be guarded by a screen mesh or other form of enclosures to prevent access.

7. *Gill boxes.* — (1) The feed end shall be guarded so as to prevent fingers being caught in the pins of the intersecting fallers.

(2) All nips of in-running rolls shall be guarded by suitable nip guards conforming to the following specifications:

Any opening which the guard may permit when fitted in position shall be so restricted with respect to the distance of the opening from any nip point through that opening and in any circumstances, the maximum width of the opening shall not exceed the following:

Distance of opening from nip point	Maximum width of opening
0 to 38 m	6 m
39 to 63 m	10 m
64 to 88 m	13 m
89 to 140 m	15 m
141 to 165 m	19 m
166 to 190 m	22 m
191 to 215 m	32 m

8. *Sliver and ribbon lappers (cotton).* — The calendar drums and the lap spool shall be provided with

a guard to prevent access to the nip between the inrunning rolls.

9. *Speed frames.* — Jack box wheels at the head stock shall be guarded and the guard shall have interlocking arrangement.

10. *Spinning mules.* — Wheels on spinning mule carriages shall be provided with substantial wheel guards, extending to within 6 m of the rails.

11. *Warpers.* — Swiveled double-bar gates shall be installed on all warpers operating in excess of 410 metres/min. These gates shall have interlocking arrangement, except for the purpose of inching or jogging:

Provided that the top and bottom bars of the gate shall be at least 1.05 and 0.53 metres high from the floor or working platform, and the gate shall be located 38 m from the vertical tangement to the beam head.

12. *Slashers.* — (1) CYLINDER DRYERS

(a) All open nips of in-running rolls shall be guarded by nip guards conforming to the requirements in paragraph 7.

(b) When slashers are operated by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170 cm. above the floor to control the operation from any point.

(c) Slashers operated by push button control shall have stop and start buttons located at each end of the machine, and additional buttons located on both sides of the machine at the size box and the delivery end. If calendar rolls are used, additional buttons shall be provided at both sides of the machine at points near to the nips, except when slashers are equipped with an enclosed dryer as in paragraph (b).

(2) ENCLOSED HOT AIR DRYER:

(a) All open nips of the top squeezing rollers shall be guarded by nip guards conforming to the requirements in paragraph 7 (2).

(b) When slashers are operated by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170 cm. above the floor to control the operation from any point.

(c) Slashers operated by push-button control shall have stop and start buttons located at each end of the machine and additional stop and start buttons located on both sides of the machines at intervals spaced not more than 1.83 metres on centres.

13. *Looms.* — Each loom shall be equipped with suitable guards designed to minimise the danger from flying shuttles.

14. *Valves of kiers, tanks and other containers.* — (1) Each valve controlling the flow of steam, injurious gases or liquids into a kier or any other tank or container into which a person is likely to enter in connection with a process, operation, maintenance or for any other purpose, shall be provided with a



suitable locking arrangement to enable the said person to lock the valve securely in the closed position and retain the key with him before entering the kier, tank or container.

(2) Wherever boiling tanks, caustic tanks and any other containers from which liquids which are hot, corrosive or toxic may overflow or splash, are so located that the operator cannot see the contents from the floor or working area, emergency shut off valves which can be controlled from a point not subject to danger of splash shall be provided to prevent danger.

15. *Shearing machines.* — All revolving blades on shearing machines shall be guarded so that the opening between the cloth surface and the bottom of the guard will not exceed 10 m.

16. *Continuous bleaching range (cotton and rayon).* — The nip of all in-running rolls on open-width bleaching machine rolls shall be protected with a guard to prevent the worker from being caught at the nip. The guard shall extend across the entire length of the nip.

17. *Mercerizing range (piece goods).* — (1) A stopping device shall be provided at each end of the machine.

(2) A guard shall be provided at each end of the frame between the in-running chain and the clip opener.

(3) A nip guard shall be provided for the in-running rolls of the mangle and washers and the guard shall conform to the requirements in paragraph 7(2).

18. *Tenter frames.* — (1) A stopping device shall be provided at each end of the machine.

(2) A guard shall be provided at each end of the machine frame at the in-running chain and clip opener.

19. *Paddlers.* — Suitable nip guard conforming to the requirement in paragraph 7(2) shall be provided to all dangerous in-running rolls.

20. *Centrifugal extractors.* — (1) Each extractor shall be provided with a guard for the basket and the guard shall have inter-locking arrangement.

(2) Each extractor shall be equipped with a mechanically or electrically operated brake to quickly stop the basket when the power driving the basket is shut off.

21. *Squeezer or wringer extractor, water mangle, starch mangle, backwasher (worsted yarn) crabbing machines and decating machines.* — All in-running rolls shall be guarded with nip guards conforming to the requirements in paragraph 7(2).

22. *Sanforizing and palmer machine.* — (1) Nip guards shall be provided on all accessible in-running rolls and these shall conform to the requirements in paragraph 7(2).

(2) Access from the sides to the nips of in-running rolls should be fenced by suitable side guards.

(3) A safety trip rod, cable or wire centre cord shall be provided across the front and back of all palmer cylinders extending the length of the face of the cylinder. It shall operate readily when pushed or pulled. The safety trip shall not be more than 170 cm. above the level at which the operator stands and shall be readily accessible.

23. *Rope washers.* — (1) Splash guards shall be installed on all rope washers unless the machine is so designed as to prevent the water or liquid from splashing the operator, the floor or working surface.

(2) A safety trip rod, cable or wire centre cord shall be provided across the front and back of all rope washers extending the length of the face of the washer. It shall operate readily whether pushed or pulled. This safety trip shall be not more than 170 cm. above the level on which the operator stands and shall be readily accessible.

24. *Laundry washer tumbler or shaker.* — (1) each drying tumbler, each double cylinder shaker or clothes tumbler, and each washing machine shall be equipped with an inter-locking arrangement which will prevent the power operation of the inside cylinder when the outer door on the case or shell is open, and which will also prevent the outer door on the case or shell from being opened without shutting off the power and the cylinder coming to a stop. This should not prevent the movement of the inner cylinder by means of a hand operated mechanism or an inching device.

(2) Each closed barrel shall also be equipped with adequate means for holding open the doors or covers of the inner and outer cylinders or shells while it is being loaded or unloaded.

25. *Printing machine (roller type).* — (1) All in-running rolls shall be guarded by nip guards conforming to the requirement in paragraph 7(2).

(2) The engraved roller gears and the large crown wheel shall be guarded.

26. *Calenders.* — The nip at the in-running side of the rolls shall be provided with a guard extending across the entire length of the nip and arranged to prevent the fingers of the workers from being pulled in between the rolls or between the guard and the rolls, and shall be so constructed that the cloth can be fed into the rolls safely.

27. *Rotary staple cutters.* — The cutter shall be protected by a guard to prevent hands reaching the cutting zone.

28. *Plaiting machines.* — Access to the trap between the knife and card bar shall be prevented by a guard.

29. *Hand bailing machine.* — An angle iron handle-stop guard shall be installed at right angle to the frame of the machine. The stop guard shall be so designed and so located that it will prevent the handle from travelling beyond the vertical position should the handle slip from the operator's hand when the pawl has been released from the teeth of the take-up-gear.

30. *Flat-work ironer.* — Each flat-work or collar ironer shall be equipped with a safety bar or other guard across the entire front of the feed or first pressure rolls, so arranged that the striking of the bar or guard by the hand of the operator or other person will stop the machine. The guard shall be such that the operator or other person cannot reach into the rolls without removing the guard. This may be either a vertical guard on all sides or a complete cover. If a vertical guard is used, the distance from the floor or working platform to the top of guard shall be not less than 1.83 metres.

## SCHEDULE II

### Woodworking Machinery

1. *Definitions.* — For the purpose of this Schedule —

(a) "woodworking machine" means a circular saw, band saw, planing machine, chain mortising machine or vertical spindle moulding machine operating on wood or cork;

(b) "circular saw" means a circular saw working in a bench (including a rack bench), but does not include a pendulum or similar saw which is moved towards the wood for the purpose of cutting operation;

(c) "band saw" means a band saw, the cutting portion of which runs in a vertical direction but does not include a log saw or band re-sawing machine; and

(d) "planing machine" means a machine for overhand planing or for thicknessing or for both operations.

2. *Stopping and starting device.* — An efficient stopping and starting device shall be provided on every wood-working machine. The control of this device shall be in such a position as to be readily and conveniently operated by the person in charge of the machine.

3. *Space around machines.* — The space surrounding every woodworking machine in motion shall be kept free from obstruction.

4. *Floors.* — The floor surrounding every wood-working machine shall be maintained in good and level condition, and shall not be allowed to become slippery, and as far as practicable shall be kept free from chips or other loose material.

5. *Training and supervision.* — (1) No person shall be employed at a woodworking machine unless he has been sufficiently trained to work that class of machine, or unless he works under the adequate supervision of a person who has a thorough knowledge of the working of the machine.

(2) A person who is being trained to work a wood-working machine shall be fully and carefully instructed as to the dangers of the machine and the precautions to be observed to ensure safe working of the machine.

6. *Circular saws.* — Every circular saw shall be fenced as follows: —

(a) behind and in direct line with the saw there shall be a riving knife, which shall have a smooth

surface, shall be strong, rigid and easily adjustable and shall also conform to the following conditions: —

(i) the edge of the knife nearer to the saw shall form an arc of a circle having a radius not exceeding the radius of the largest saw used on the bench;

(ii) the knife shall be maintained as close as practicable to the saw, having regard to the nature of the work being done at the time, and at the level of the bench table. The distance between the front edge of the knife and the teeth of the saw shall not exceed 12 millimetres; and

(iii) for a saw of a diameter of less than 60 centimetres the knife shall extend upwards from the bench table to within 25 millimetres of the top of the saw, and for a saw of a diameter 60 centimetres or over shall extend upwards from the bench table to a height of at least 23 centimetres.

(b) the top of the saw shall be covered by a strong and easily adjustable guard, with a flange at the side of the saw farthest from the fence. The guard shall be kept so adjusted that the said flange shall extend below the roots of the teeth of the saw. The guard shall extend from the top of the riving knife to a point as low as practicable at the cutting edge of the saw;

(c) the part of the saw below the bench table shall be protected by two plates of metal or other suitable material, one on each side of the saw; such plates shall not be more than 15 centimetres apart, and shall extend from the axis of the saw outwards to a distance of not less than 5 centimetres beyond the teeth of the saw. Metal plates, if not beaded, shall be of a thickness of at least 2.5 millimetres, or, if beaded, be of a thickness of at least 1.25 millimetres.

7. *Push sticks.* — A push stick or other suitable appliances shall be provided for use at every circular saw and at every vertical spindle moulding machine to enable the work to be done without unnecessary risk.

8. *Band saws.* — Every band saw shall be guarded as follows —

(a) both sides of the bottom pulley shall be completely encased by sheet or expanded metal or other suitable material;

(b) the front of the top pulley shall be covered with sheet or expanded metal or other suitable material; and

(c) all portions of the blade shall be enclosed or otherwise securely guarded, except the portion of the blade between the bench table and the top guide.

9. *Planing machines.* — (1) A planing machine (other than a planing machine which is mechanically fed) shall not be used for overhand planing unless it is fitted with a cylindrical cutter block.

(2) Every planing machine used for overhand planing shall be provided with a "bridge" guard capable of covering the full length and breadth of

the cutting slot in the bench, and so constructed as to be easily adjusted both in a vertical and horizontal direction.

(3) The feed roller of every planing machine used for thicknessing except the combined machine for overhand planing and thicknessing shall be provided with an efficient guard.

10. *Vertical spindle moulding machines.* — (1) The cutter of every vertical spindle moulding machine shall be guarded by the most efficient guard having regard to the nature of the work being performed.

(2) The wood being moulded at a vertical spindle moulding machine, shall, if practicable, be held in a jig or holder of such construction as to reduce as far as possible the risk of accident to the worker.

11. *Chain mortising machines.* — The chain of every chain mortising machine shall be provided with a guard which shall enclose the cutters as far as practicable.

12. *Adjustment and maintenance of guards.* — The guards and other appliances required under this Schedule shall be —

(a) maintained in an efficient state;

(b) constantly kept in position while the machinery is in motion; and

(c) so adjusted as to enable the work to be done without unnecessary risk.

13. *Exemptions.* — Paragraphs 6, 8, 9 and 10 shall not apply to any wood working machine in respect of which it can be proved that other safeguards are provided, maintained and used which render the machine as safe as it would be if guarded in the manner prescribed in this Schedule.

### SCHEDULE III

#### Rubber and Plastic Mills

1. *Definition.* — (i) A "Rubber and Plastic Mills" shall mean machine with rollers used in breaking down, cracking, washing, grating, mixing, refining and warming of rubber or rubber compounds and plastic or plastic compounds.

(ii) A "Calender" shall mean machine with rolls used for frictioning, sheeting, coating and spreading of rubber or rubber compounds and plastic or plastic compounds.

2. *Installation of machines.* — Rubber and plastic mills shall be so installed that the top of the front roll is not less than 105 centimetres above the floor or working level:

Provided that in existing installations where the top of the front roll is below this height, a strong, rigid distance-bar guard shall be fitted across the front of the machine in such a position that the operator cannot reach the nip of the roller from the normal working position of the operator.

3. *Safety devices.* — (i) Rubber and plastic mills shall be equipped with —

(a) hoppers so constructed or guarded that it is impossible for the operators to come into con-

tact in any manner with the nip of the rolls; or

(b) horizontal safety-trip rods or tight wire cables across both front and rear, which will, when pushed or pulled, operate instantly, to disconnect the power and apply the brakes or to reverse the rolls.

(c) Safety-trip rods or tight wire cables on rubber mills shall extend across the entire length of the face of the rolls and shall be located not more than 175 centimetres above the floor or working level.

(ii) Calender machines shall be equipped with —

(a) Horizontal safety-trip rods or tight wire cables across both front and rear, which will when pushed or pulled operate instantly, to disconnect the power and apply the brakes or to reverse the roll;

(b) Safety-trip rods or tight wire cables on calender machines shall extend across the entire length of the face of the roll and shall be located not more than 170 centimetres above the floor or working level;

(c) on each side of all calenders and near both ends of the face of the rolls there shall be a vertical tight wire cable connecting with the bar tripping mechanism at the top and fastened to the frame within 30 centimetres of the floor. These cables should be positioned at a distance of not more than 30 centimetres from the face of the roll and at a distance of not less than 25 millimetres from the calender frame.

4. *Maintenance and safety devices.* — Safety trip rods and tight wire cables on all rubber mills and calenders shall be examined and tested daily in the presence of the manager or other responsible person and if any defect is disclosed by such examination and test, the mill shall not be used until such defect has been remedied.

5. *Injunction Moulding Machine.* — (a) An electrical interlock arrangement shall be provided so that the moulds cannot be closed unless the front safety gate is fully closed and on opening the front safety gate, the moulds will stop automatically.

(b) In addition to the above arrangement an hydraulic safety shall also be incorporated with the front safety gate. This shall prevent the tail stock mould plate from moving forward on opening of the front safety gate.

(c) At the rear of the machine, there shall be provided either an efficient fixed guard or a sliding gate which shall be electrically inter-locked with the movement of the mould plates in the manner of the front safety gate as required under (a) above so as to prevent access to the danger zone of the moulds in motion from the rear.

### SCHEDULE IV

#### Centrifugal Machines

1. *Definition.* — "Centrifugal machines" include centrifugal extractors or droextractors, separators and driers.

2. Every part of centrifugal machine shall be —

(a) of good design and construction and of adequate strength;

(b) properly maintained; and

(c) examined thoroughly by a competent person at regular intervals.

3. *Interlocking guard for drum or basket.* — (1) The cage housing the rotating drum or basket of every centrifugal machine shall be provided with a strong lid. The design and construction of the cage as well as the lid shall be such that no access is possible to the drum or basket when the lid is closed.

(2) Every centrifugal machine shall be provided with an efficient interlocking device that will effectively prevent the lid referred to in sub-paragraph (1) from being opened while the drum or basket is in motion and prevent the drum or basket being set in motion while the lid is in the open position.

4. *Braking arrangement.* — Every centrifugal machine shall be provided with an effective braking arrangement capable of bringing the drum or basket to rest within as short a period of time as reasonably practicable after the power is cut off.

5. *Operating speed.* — No centrifugal machine shall be operated at a speed in excess of the manufacturer's rating which shall be legibly stamped at easily visible places both on the inside of the basket and on the outside of the machine casing.

6. *Exceptions.* — Sub-paragraph (2) of paragraph 3, paragraphs 4 and 5 shall not apply in case of top lung machines or similar machines used in the sugar manufacturing industry.

#### SCHEDULE V

##### Shears and Guillotine Machines

1. *Definition.* — The term "shears and guillotine" means a machine, whether driven by power or otherwise, equipped with a straight beveled blade operating vertically against a resisting edge and used for shearing metals or non-metallic substances.

2. A barrier metal guard of adequate strength shall be provided at the front of the knife, fastened to the machine frame and shall be so fixed as would prevent any part of the operator's body to reach the descending blade from above, below or through the barrier guard or from the sides:

Provided that in case of machines used in the paper printing and allied industries where a fixed barrier metal guard is not suitable on account of the height and volume of the material being fed, there shall be provided suitable starting devices which require simultaneous action of both the hands of the operator or an automatic device which will remove both the hands of the operator from the danger zone at every descent of the blade.

3. At the back end of such machines, an inclined guard shall be provided over which the slit pieces would slide and be collected at a safe distance in a manner as would prevent a person at the back from reaching the descending blade.

#### SCHEDULE VI

##### Agitators and Mixing Machines

1. *Definition.* — "Agitators and Mixing Machines" means a tank or other container equipped with power-

-driven mixing arms, blades or paddle wheels fixed to revolvable shafts or other simple mechanical devices for blending stirring liquids with other liquids or with solid substances or combinations of these.

2. When the top of an open agitator tank, beater tank, tank or paddle tank or a similar vessel is less than 1 M above the adjacent floor or working level, adequate standard railings shall be installed on all open sides.

3. Agitators and mixing machines shall be provided with an efficient inter-lock arrangement for the top lid, to prevent access to the agitating, stirring or similar devices, whilst in motion and would prevent restart under power with the lids in open position.

4. When other inspection or examination openings are provided at the top or sides of the container vessels of the agitator and mixing machines, such openings shall be provided with standard grill guards as would prevent access of any part of the operator's body coming in contact with agitator stirring or similar devices whilst in motion.

5. When discharge holes, openings, chutes or similar arrangements are provided at the bottom or at the sides of the container vessels of the agitator and mixing machines, they shall be so designed, shaped, guarded or situated as would prevent access of any part of operator's body coming in contact with agitating, stirring or similar devices, whilst in motion inside the vessel.

#### SCHEDULE VII

##### Leather Plastic and Rubber Stripper Machines

Strippers for trimming or punching tanned hides, plastic rubber sheets in leather making, footwear manufacturing or in similar industries shall be provided with suitable devices which require simultaneous action of both the hands of the operator or an automatic device which will remove both the hands of the operator from the danger zone at every descent of the blade, punch or stripper cutter.

#### SCHEDULE VIII

1. In all machinery driven by power and installed in any factory after commencement of this rule, all couplings with projecting bolt heads and similar projections shall be completely encased or otherwise, effectively guarded as to prevent danger.

Rules prescribed under sub-section (1) of section 22 and section 112.

61. *Register of specially trained adult workers.* — Register of workers attending to machinery as provided in sub-section (1) of section 22 shall be in Form 10.

62. *Tight fitting clothing.* — A worker required to wear tight fitting clothing under sub-section (1) of section 22 shall be provided by the occupier with such clothing which shall consist of at least a pair of closely fitting shorts and a closely fitting half sleeves shirt or vest. Such clothing shall be returned to the occupier on termination of service or when new clothing is provided.

Rule prescribed under section 41.

**63. Belts, etc. to be regularly examined.** — All belts shall be regularly examined to ensure that the joints are safe and the belts are at proper tension.

Rule prescribed under sub-section (2) of section 23.

**64. Employment of young persons on dangerous machines.** — The machines specified in sections 28, 29 and 30 and the machines mentioned below shall be deemed to be of such dangerous character that young persons shall not work at them unless the provisions of sub-section (1) of section 23 are complied with —

- (a) Power presses other than hydraulic presses.
- (b) Milling machines used in the metal trades.
- (c) Circular saws.
- (d) Platen printing machines.
- (e) Guillotine machines.

Rules prescribed under sub-section (8) of section 28.

**65. Hoist examination — particulars of.** — A register shall be maintained to record particulars of examination of hoists or lifts and shall give particulars as shown in Form 11.

Exemption under sub-section (4) of section 28.

**66. Exemption of certain hoists and lifts.** — In pursuance of the provisions of sub-section (4) of section 28, in respect of any class or description of hoist or lift specified in the first column of the following Schedule, the requirements of section 28 specified in the second column of the said Schedule and set opposite to that class or description or hoist or lift shall not apply: —

#### SCHEDULE

Class or description of hoist or lift	Requirements which shall not apply
(1)	(2)
Hoists or lifts mainly used for raising mate- rials for charging blast furnaces or lime kilns.	Sub-section (1) (b) in so far as it requires a gate at the bottom landing; sub-section (1) d); sub-section (1) (e).
Hoists not connected with mechanical power and which are not used for carrying persons.	Sub-section (1) (b) in so far as it requires the hoistways or lift- ways enclosure to be so constructed as to prevent any person or thing from being trapped between any part of the hoist or lift and any fixed struc- ture or moving part; sub-section (1) (e).

Rule prescribed under sub-section (2) of section 29.

**67. Lifting machines, chains, ropes and lifting tackles.** — (1) No lifting machine and no chain, rope or lifting tackle, except a fibre rope or fibre rope sling, shall be taken into use in any factory for the first time in that factory unless it has been tested

and all parts have been thoroughly examined by a competent person and a certificate of such a test and examination specifying the safe working load or loads and signed by the person making the test and the examination, has been obtained and is kept available for inspection.

(2) Every jib-crane so constructed that the safe working load may be varied by the raising or lowering of the jib, shall have attached thereto either an automatic indicator of safe working loads or an automatic jib angle indicator and a table indicating the safe working loads at corresponding inclinations of the jib or corresponding radii of the load.

(3) A table showing the safe working loads of every kind and size of chain, rope or lifting tackle in use, and, in the case of multiple sling, the safe working loads at different angles of the legs, shall be posted in the store room in which the chains, ropes or lifting tackles are kept, and in prominent positions on the premises and no chain, rope or lifting tackle not shown in the table shall be used:

Provided that this sub-rule shall not apply in respect of such lifting tackle if the safe working load thereof, or in the case of a multiple sling, the safe working load at different angles of the legs, is plainly marked upon it.

(4) The register to be maintained under clause (a) (iii) of sub-section (1) of section 29 of the Act shall be in Form 12 and shall be kept readily available for inspection.

(5) All rails on which a travelling crane moves and every track on which the carriage of a transporter or runway moves shall be of proper size and adequate strength and have an even running surface; and every such rail or track shall be properly laid, adequately supported and properly maintained.

(6) To provide access to rail tracks of overhead travelling cranes suitable passage-ways of at least 50 centimetres width with toeboards and double hand rails 90 centimetres high shall be provided alongside, and clear of, the rail tracks of overhead travelling cranes, such that no moving part of the crane can strike persons on the ways, and the passage-way shall be at a lower level than the crane track itself. Safe access ladders shall be provided at suitable intervals to afford access to these passage-ways, and from passage-ways to the rail tracks:

Provided that the Chief Inspector may, for reasons to be specified in writing, exempt any factory in respect of any overhead travelling crane from the operation of any provision of this sub-rule subject to such conditions as he may specify.

(7) All chains and lifting tackles except a rope sling shall, unless they have been subjected to such other heat treatment as may be approved by the Chief Inspector of Factories, be effectively annealed under the supervision of a competent person at the following intervals:

(a) all chains, slings, rings, hooks, shackles and swivels used in connection with molten metal or molten slag or when they are made of 12.5 millimetres bar or smaller, once at least in every six months;

(b) all other chains, rings, hooks, shackles and swivels in general use, once at least in every twelve months:



Provided that chains and lifting tackle not in frequent use shall, subject to the Chief Inspector's approval, be annealed only when necessary. Particulars of such annealing shall be entered in a register in Form 12.

(8) Nothing in the foregoing sub-rule (7) shall apply to the following classes of chains and lifting tackles:—

- (a) chains made of malleable cast iron;
- (b) plate link chains;
- (c) chains, rings, hooks, shackles and swivels made of steel or of any non-ferrous metal;
- (d) pitched chains, working on sprocket or pocketed wheels;
- (e) rings, hooks, shackles and swivels permanently attached to pitched chains, pulley blocks or weighing machines;
- (f) hooks and swivels having screw threaded parts or ball bearing or other case hardened parts;
- (g) socket shackles secured to wire ropes by white-metal capping;
- (h) bodeaux connections; and
- (i) any chain or lifting tackle which has been subjected to the heat treatment known as "normalising" instead of annealing:

Provided that such chains and lifting tackles shall be thoroughly examined by a competent person once at least in every twelve months and particulars entered in the register kept in Form 12.

(9) All lifting machines, ropes, chains and lifting tackles, except a fibre rope or fibre sling, which have been lengthened, altered or repaired by welding or otherwise, shall, before being again taken into use, be adequately re-tested and re-examined by a competent person and certificate of such test and examination be obtained, and particulars entered in the register kept in Form 12.

(10) No person under 18 years of age and no person who is not sufficiently competent and reliable shall be employed as driver of a lifting machine whether driven by mechanical power or otherwise, or to give signals to a driver.

(11) Where the Chief Inspector of Factories is satisfied that in a factory due to shutdown or for any other reasons it is not practicable to maintain a minimum distance of 6 metres between the person employed or working on or near the wheel track of a travelling crane and the crane, he may at the request of the manager, reduce the distance to such extent as he may consider necessary and also prescribe further precautions indicating appointment of suitable number of supervisors to ensure the safety of the persons while they are employed or working on or near the track.

Rules prescribed under sub-section (2) of section 31.

**68. Pressure vessels or plant.**—(1) Interpretation—In this rule—

(a) "design pressure" means the maximum pressure that a pressure vessel or plant is designed to withstand safely when operating normally;

(b) "maximum permissible working pressure" means the maximum pressure at which a pressure vessel or plant is permitted to be operated or used under this rule and is determined by the technical requirements of the process;

(c) "plant" means a system of piping that is connected to a pressure vessel and is used to contain a gas, vapour or liquid under pressure greater than the atmospheric pressure, and includes the pressure vessel;

(d) "pressure vessel" means a vessel that may be used for containing, storing, distributing, transferring, distilling, processing or otherwise handling any gas, vapour or liquid under pressure greater than the atmospheric pressure and includes any pipelines fitting or other equipment attached thereto or used in connection therewith; and

(e) "competent person" means a person who is, in the opinion of the Chief Inspector, capable by virtue of his qualifications, training and experience, of conducting a thorough examination and pressure tests, as required, on a pressure vessel or plant, and of making a full report on its condition.

(2) *Exceptions*—Nothing in this rule shall apply to—

(a) vessels made of ferrous materials having an internal operating pressure not exceeding 1 kilogram per square centimetre.

(b) steam boilers, steam and feed pipes and their fittings coming under the purview of the Indian Boilers Act, 1923;

(c) metal bottles or cylinders used for storage or transport of compressed gases or liquified or dissolved gases under pressure covered by the Gas Cylinder Rules, 1940 framed under the Indian Explosives Act, 1884;

(d) vessels in which internal pressure is due solely to the static heat of liquid;

(e) vessels with a nominal water capacity not exceeding 500 litres connected in a water-pumping system containing air that is compressed to serve as a cushion;

(f) vessel for nuclear energy application;

(g) refrigeration plant having a capacity of 3 tone or less of refrigeration in 24 hours; and

(h) working cylinders of steam engines or prime movers, feed pumps and steam traps; turbine casings; compressor cylinders; steam separators or dryers; steam strainers; steam de-superheaters; oil separators; air receivers for fire sprinkler installations; air receivers of mono-type machines provided the maximum working pressure of the air receiver does not exceed 1.33 kilograms per square centimetre and the capacity 85 litres; air receivers of electrical circuit breakers; air receivers of electrical relays; air vessels on pumps, pipe coils, accessories of instruments and appliances such as cylinders and piston assemblies used for operating relays and interlocking type of guards; vessels with liquids subjected to static heat only; and hydraulically operating cylinders other than any cylinder communicating with an air loaded accumulator.



(3) *Design and construction.* — Every pressure vessel or plant used in a factory —

(a) shall be properly designed on sound engineering practice;

(b) shall be of good construction, sound material, adequate strength and free from any patent defects; and

(c) shall be properly maintained in a safe conditions:

Provided that the pressure vessel or plant in respect of the design and construction of which there is an Indian Standard or a standard of the country of manufacture or any other law or regulation in force, shall be designed and constructed in accordance with the said standard, law or regulation, as the case may be, and a certificate thereof shall be obtained from the manufacturer or from the competent person which shall be kept and produced on demand by an Inspector.

(4) *Safety devices.* — Every pressure vessel shall be fitted with —

(a) a suitable safety valve or other effective pressure relieving device of adequate capacity to ensure that the maximum permissible working pressure of the pressure vessel shall not be exceeded. It shall be set to operate at a pressure not exceeding the maximum permissible working pressure and when more than one protective device is provided, only one of the devices need to be set to operate at the maximum permissible working pressure and the additional device shall be set to discharge at a pressure not more than 5 per cent in excess of the maximum permissible working pressure;

(b) a suitable pressure gauge with a dial range not less than 1.5 times the maximum permissible working pressure, easily visible and designed to show at all times the correct internal pressure and marked with a prominent red mark at the maximum permissible working pressure of the pressure vessels;

(c) a suitable nipple and globe valve connected for the exclusive purpose of attaching a test pressure gauge for checking the accuracy of the pressure gauge referred to in clause (b) of this sub-rule;

(d) a suitable stop valve or valves by which the pressure vessel may be isolated from other pressure vessels or plant or source of supply of pressure. Such a stop valve or valves shall be located as close to the pressure vessel as possible and shall be easily accessible; and

(e) a suitable drain cock or valve at the lowest part of the pressure vessel for the discharge of the liquid or other substances that may collect in the pressure vessel;

Provided that it shall be sufficient for the purpose of this sub-rule if the safety valve or pressure relieving device, the pressure gauge and the stop valve are mounted on a pipeline immediately adjacent to the pressure vessel and where there is a range of two or more similar pressure vessels served by the same pressure lead, only one set of such mountings need be fitted on the pressure

lead immediately adjacent to the range or pressure vessels, provided they cannot be isolated.

(5) *Pressure reducing devices* —

(a) Every pressure vessel which is designed for a working pressure less than the pressure at source of supply, or less than the pressure which can be obtained in the pipe connecting the pressure vessel with any other source of supply, shall be fitted with a suitable pressure reducing valve or other suitable automatic device to prevent the maximum permissible working pressure of the pressure vessel being exceeded.

(b) To further protect the pressure vessel in the event of failure of the reducing valve or device, at least one safety valve having a capacity sufficient to release all the steam, vapour or gas without undue pressure rise as determined by the pressure at the source of supply and the size of the pipe connecting the source of supply, shall be fitted on the low pressure side of the reducing valve.

(6) *Pressure vessel or plant being taken into use* —

(a) No new pressure vessel or plant shall be taken into use in a factory after coming into force of this rule unless it has been hydrostatically tested by a competent person at a pressure at least 1.3 times the design pressure, and no pressure vessel or plant which has been previously used or has remained isolated or idle for a period exceeding 2 months or which has undergone alterations or repairs shall be taken into use in a factory unless it has been thoroughly examined by a competent person externally and internally, if practicable, and has been hydrostatically tested by the competent person at a pressure which shall be 1.5 times the maximum permissible working pressure:

Provided, however, that the pressure vessel or plant which is so designed and constructed that it cannot be safely filled with water or liquid or is used in service when even some traces of water cannot be tolerated, shall be pneumatically tested at a pressure not less than the design pressure or the maximum permissible working pressure as the case may be:

Provided further that the pressure vessel or plant which is lined with glass shall be tested hydrostatically or pneumatically as required at a pressure not less than the design pressure or maximum permissible working pressure as the case may be:

Design pressure shall not be less than the maximum permissible working pressure and shall take into account the possible fluctuations of pressure during actual operation.

(b) No pressure vessel or plant shall be used in a factory unless there has been obtained from the maker of the pressure vessel or plant or from the competent person a certificate specifying the design pressure or maximum permissible working pressure thereof, and stating the nature of tests to which the pressure vessel or plant and its fittings (if any) have been subjected, and every pressure vessel or plant so used in a factory shall be marked so as to enable it to be identified

as to be the pressure vessel or plant to which the certificate relates and the certificate shall be kept available for perusal by the Inspector.

(c) No pressure vessel or plant shall be permitted to be operated or used at a pressure higher than its design pressure, or the maximum permissible working pressure as shown in the certificate.

*(7) In-service test and examination —*

(a) Every pressure vessel or plant in service shall be thoroughly examined by a competent person —

(i) externally, once in every six months, to ensure general condition of the vessel and the working of its fittings, and

(ii) internally, once in every twelve months, to ensure condition of the walls, seams, and ties, both inside and outside the vessel, soundness of the parts of the vessel, and the effects of corrosion:

Provided that if by reason of the construction of a pressure vessel or plant, a thorough internal examination is not possible, this examination may be replaced by a hydrostatic test which shall be carried out once in every two years.

Provided further that for a pressure vessel or plant in continuous process which cannot be frequently opened, the period of internal examination may be extended to four years; and

(iii) by an hydraulic test once in every period of four years:

Provided that in respect of a pressure vessel or plant with thin walls, such as sizing cylinder made of copper or any other non-ferrous metal, periodic hydrostatic test may be dispensed with subject to the condition that the requirements laid down in sub-rule (8) are fulfilled.

Provided further that when it is impracticable to carry out thorough external examination of any pressure vessel or plant every six months as required in sub-clause (i), or if owing to its construction and use a pressure vessel or plant cannot be hydrostatically tested as required in sub-clauses (ii) and (iii), a thorough external examination of the pressure vessel or plant shall be carried out at least once in every two years and at least once in every four years a thorough systematic non-destructive test like ultrasonic test for metal thickness or other defects of all parts, the failure of which might lead to eventual rupture of the pressure vessel or plant, shall be carried out.

(b) The pressure for the hydrostatic test to be carried out for the purpose of this sub-rule shall be 1.25 times the design pressure or 1.5 times the maximum permissible working pressure, whichever is less.

*(8) Thin walled pressure vessel or plant —*

(a) In respect of any pressure vessel or plant of thin walls such as sizing cylinder made of copper or any other non-ferrous metal, the maximum permissible working pressure shall be reduced at the rate of 5 per cent of the original maximum permissible working pressure for every year of its use after the first five years and no

such cylinder shall be allowed to continue to be used for more than twenty years after it was first taken into use.

(b) If any information as to the date of construction, thickness of walls, or maximum permissible working pressure is not available, the age of such pressure vessel or plant shall be determined by the competent person in consultation with the Chief Inspector from the other particulars available with the manager.

(c) Every new and second hand pressure vessel or plant of thin walls to which repairs likely to affect its strength or safety have been carried out, shall be tested before use to at least 1.5 times its maximum permissible working pressure.

*(9) Report by competent person —*

(a) If during any examination any doubt arises as to the ability of the pressure vessel or plant to work safely until the next prescribed examination, the competent person shall enter in the prescribed register his observations, findings and conclusions with other relevant remarks with reasons and may authorise the pressure vessel or plant to be used and kept in operation subject to a lowering of maximum permissible working pressure, or to more frequent or special examination or test, or subject to both these conditions.

(b) A report of every examination or test carried out shall be completed in Form 13 and shall be signed by the person making the examination or test, and shall be kept available for perusal by the Inspector at all hours when the factory or any part thereof is working.

(c) Where the report of any examination under this rule specified any conditions for securing the safe working of any pressure vessel or plant, the pressure vessel or plant shall not be used unless the specified condition is fulfilled.

(d) The competent person making report of any examination under this rule, shall within seven days of the completion of the examination, send to the Inspector a copy of the report in every case where the maximum permissible working pressure is reduced or the examination shows that the pressure vessel or plant or any part thereof cannot continue to be used with safety unless certain repairs are carried out or unless any other safety measure is taken.

Rule prescribed under sub-section (2) of Section 34:

69. **Excessive weights.** — (1) No woman or young person shall, unaided by another person, lift, carry or move by hand or on head, any material, article, tool or appliance exceeding the maximum limit in weight set out in the following Schedule: —

**SCHEDULE**

Persons	Maximum weight of material article, tool or appliance
(a) Adult males ... ..	55 kgms.
(b) Adult females ... ..	30 kgms.
(c) Adolescent male ... ..	30 kgms.
(d) Adolescent female ... ..	20 kgms.
(e) Male child ... ..	16 kgms.
(f) Female child ... ..	13 kgms.

(2) No woman or young person shall engage in conjunction with others, in lifting, carrying or moving by hand or on head, any material, article, tool or appliance if the weight thereof exceeds the lowest weight fixed by the Schedule to sub-rule (1) for any of the persons engaged, multiplied by the number of the persons engaged.

Rule prescribed under Section 35:

70. **Protection of eyes.** — Effective screens or suitable goggles shall be provided for the protection of persons employed in or in the immediate vicinity of the following processes: —

(a) The processes specified in Schedule I annexed hereto, being processes which involve risk of injury to eyes from particles or fragments thrown off in the course of the processes.

(b) The processes specified in Schedule II annexed hereto being processes which involve risk of injury to eyes by reasons of exposure to excessive light or infrared or ultra-violet radiations.

#### SCHEDULE I

1. Breaking, cutting, dressing or carving of bricks, stone, concrete, slag or similar materials by means of a hammer, chisel, pick or similar hand tool or by means of a portable tool driven by mechanical power, and the dry grinding of surfaces of any such materials by means of a wheel or disc driven by mechanical power, where, in any of the foregoing cases, particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
2. Dry grinding of surfaces of metal by applying them by hand to a wheel, disc or band driven by mechanical power, and of surfaces of metal by means of a portable tool driven by mechanical power.
3. Dividing into separate parts of metal, bricks, stone, concrete or similar materials by means of a high speed saw driven by mechanical power or by means of an abrasive cutting-off wheel or disc driven by mechanical power.
4. Turning of metals or articles of metal, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
5. Drilling by means of portable tools, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
6. Welding and cutting of metals by means of an electric, oxy-acetylene or similar process.
7. Hot fettling of steel casting by means of flux injected burner or air torch, and de-seaming of metal.
8. Fettling of metal castings involving the removal of metal, including runners, gates and risers, and removal of any other material during the course of such fitting.
9. Chipping of metal, and chipping, knocking out, cutting out or cutting off of cold rivets, belts, nuts, lugs, pins, cellars or similar articles from any structure or plant, or from part of any structure or plant, by means of a hammer, chisel, punch or similar hand tool, or by means of a portable tool driven by mechanical power.
10. Chipping or scurfing of paint, scale, slag, rust or other corrosion from the surface metal and other hard materials by means of a hand tool or by a portable tool driven by mechanical power.
11. Breaking of scrap metal by means of a hammer or by means of a tool driven by mechanical power.
12. Routing of metal, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
13. Work with drop hammers and power hammers used in either case for the manufacture of forgings, and work by any person not working with such hammers, whose work is carried on in such circumstances and in such a position that particles or fragments are liable to be thrown off towards his face during work with drop hammers or power hammers.
14. Work at a furnace where there is risk to the eye from molten metal.
15. Pouring or skimming of molten metal.
16. Work involving risk to the eyes from hot sand being thrown off.
17. Turning or dressing of an abrasive wheel.
18. Handling in open vessels or manipulation of strong acids, or dangerous corrosive liquids or materials, and operation, maintenance or dismantling of plant or any part of plant, being or part of plant which contains or has contained such acids, liquids or materials, unless the plant or part of plant has been so prepared (by isolation, reduction of pressure or otherwise), treated, or designed and constructed as to prevent risk of injury.
19. Any other process wherein there is a risk of injury to eyes from particles or fragments thrown off during the course of the process.

#### SCHEDULE II

1. Welding or cutting of metals by means of an electrical, oxy-acetylene or similar process.
2. All work on furnaces where there is risk of exposure to excessive light or infra-red radiations.
3. Process such as rolling, casting or forging of metals, where there is risk of exposure to excessive light or infra-red radiations.
4. Any other process wherein there is a risk of injury to eyes from exposure to excessive light or infra-red or ultra-violet radiations.

Rule prescribed under sub-section (6) of Section 36:

71. **Minimum dimensions of man-holes.** — Every chamber, tank, vat, pipe flue or other confined space in which persons may have to enter and which may contain dangerous fumes to such an extent as to involve risk of the persons being overcome thereby, shall, unless there is other effective means of egress,

be provided with a man-hole which may be rectangular, oval or circular in shape, and which shall —

(a) in the case of rectangular or oval shape, be not less than 40 centimetres long and 30 centimetres wide;

(b) in the case of a circular shape, be not less than 40 centimetres in diameter.

**Exemption under sub-section (5) of Section 37:**

**72. Exemptions.** — The requirements of sub-section (4) of Section 37 shall not apply to the following processes carried on in any factory: —

(a) The operation of repairing a water sealed gas-holder by the electric welding process, subject to the following conditions: —

(i) The gas-holder shall contain only the following gases, separately or mixed at a pressure greater than atmospheric pressure, namely, town gas, coke-oven gas, producer gas, blast furnace gas or gases other than air, used in their manufacture:

Provided that this exemption shall not apply to any gas-holder containing acetylene or mixture of gases, to which acetylene has been added intentionally;

(ii) Welding shall only be done by the electric welding processes and shall be carried out by experienced operatives under the constant supervision of a competent person.

(b) The operations of cutting or welding steel or wrought iron gas mains and services by the application of heat, subject to the following conditions: —

(i) The main or service shall be situated in the open air, and it shall contain only the following gases, separately or mixed at a pressure greater than atmospheric pressure, namely, town gas, coke-oven gas, producer gas, blast furnace gas or gases other than air, used in their manufacture;

(ii) The main or service shall not contain acetylene or any gas or mixture of gases to which acetylene has been added intentionally;

(iii) The operation shall be carried out by an experienced person or persons and at least two persons (including those carrying out the operations) experienced in work on gas mains and over 18 years of age shall be present during the operation;

(iv) The site of the operation shall be free from any inflammable or explosive gas or vapour;

(v) Where acetylene gas is used as a source of heat in connection with an operation, it shall be compressed and contained in a porous substance in a cylinder; and

(vi) Prior to the application of any flame to the gas main or service, this shall be pierced or drilled and the escaping gas ignited.

(c) The operation of repairing an oil tank on any ship by the electric welding process, subject to the following conditions: —

(i) The only oil contained in the tank shall have a flash point of not less than 66°C (close test) and a certificate to this effect shall be obtained from two competent analysts;

(ii) The analyst's certificate shall be kept available for inspection by an Inspector, or by any person employed or working on the ship;

(iii) The welding operation shall be carried out only on the exterior surface of the tank at a place —

(a) which is free from oil or oil leakage in inflammable quantities; and

(b) which is not less than 30 centimetres below the nearest part of the surface of the oil within the tank; and

(iv) Welding shall be done only by the electric welding and shall be carried out by experienced operators under the constant supervision of a competent person.

**Rule prescribed under Sections 38 and 41:**

**73. Fire.** — (1) Processes, equipment, plant, etc. involving serious explosion and serious fire hazards —

(a) All processes involving serious explosion and flash fire hazard shall be located in segregated buildings where the equipment shall be so arranged that only a minimum number of employees are exposed to such hazards at any one time.

(b) All industrial processes involving serious fire hazard shall be located in buildings or work places separated from one another by walls of fire-resistant construction.

(c) Equipment and plant involving serious fire or flash fire hazard shall, wherever possible, be so constructed and installed that in case of fire, they can be easily isolated.

(d) Ventilation ducts, pneumatic conveyors and similar equipment involving a serious fire risk shall be provided with flame-arresting or automatic fire extinguishing appliances.

(e) In all workplaces having serious fire or flash fire hazards, passages between machines, installations or piles of material shall be at least 90 cm. wide.

(2) *Access for fire fighting.* — Buildings and plants shall be so laid out and roads, passageways, etc. so maintained as to permit unobstructed access for fire fighting.

(3) *Protection against lightning.* — Protection from lightning shall be provided for —

(i) buildings in which explosive or highly inflammable substances are manufactured, used, handled or stored;

(ii) storage tanks containing oils, paints or other inflammable liquids;

(iii) grain elevators; and

(iv) buildings, tall chimneys or stacks where inflammable gases, fumes, dust or lint are likely to be present.

(4) *Explosives.* — All explosives shall be handled, transported, stored and used in accordance with the provisions in the Indian Explosives Act, 1884.

(5) *Precautions against ignition.* — Wherever there is danger of fire or explosion from accumulation of inflammable or explosive substances in air —

(a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;

(b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;

(c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;

(d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited;

(e) transmission belts with iron fasteners shall not be used; and

(f) all other precautions, as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks, overheated surfaces of machinery or plant, chemical or physical-chemical reaction and radiant heat.

(6) *Spontaneous ignition.* — Where materials are likely to induce spontaneous ignition, care shall be taken to avoid formation of air pocket and to ensure adequate ventilation.

(7) *Cylinders containing compressed gas.* — Cylinders containing compressed gas may only be stored in open if they are protected against excessive variation of temperature, direct rays of sun, or continuous dampness. Such cylinders shall never be stored near highly inflammable substances, furnaces or hot processes. The room where such cylinders are stored shall have adequate ventilation.

(8) *Storage of inflammable liquids.* — (1) The quantity of inflammable liquids in any work room shall be the minimum required for the process or processes carried on in such room. Inflammable liquids shall be stored in suitable containers with close fitting covers:

Provided that not more than 20 litres of inflammable liquids having a flash point of 21°C or less shall be kept or stored in any work room.

(b) Inflammable liquids shall be stored in closed containers and in limited quantities in well ventilated rooms of fire resisting construction which are isolated from the remainder of the building by fire walls and self closing fire doors.

(c) Large quantities of such liquids shall be stored in isolated adequately ventilated building of fire resisting construction or in storage tanks, preferably underground and at a distance from any building as required in the Petroleum Rules, 1976.

(d) Effective steps shall be taken to prevent leakage of such liquids into basements, sumps or

drains and to confine any escaping liquid within safe limits.

(9) Accumulation of inflammable dust, gas, fume or vapour in air or inflammable waste material on the floors —

(a) Effective steps shall be taken for removal or prevention of the accumulation in the air of inflammable dust, gas, fume or vapour to an extent which is likely to be dangerous.

(b) No waste material of a inflammable nature shall be permitted to accumulated on the floors and shall be removed at least once in a day or shift, and more often, when possible. Such materials shall be placed in suitable metal containers with covers wherever possible.

(10) *Fire exits.* — (a) In this rule —

(i) "horizontal exit" means an arrangement which allows alternative egress from a floor area to another floor at or near the same level in an adjoining building or an adjoining part of the same building with adequate separation; and

(ii) "travel distance" means the distance an occupant has to travel to reach an exit.

(b) An exit may be a doorway, corridor, passageway to an internal or external stairway or to a verandah. An exit may also include a horizontal exit leading to an adjoining building at the same level.

(c) Lifts, escalators and revolving doors shall not be considered as exits for the purpose of this sub-rule.

(d) In every room of a factory exits sufficient to permit safe escape of the occupants in case of fire or other emergency shall be provided which shall be free of any obstruction.

(e) The exits shall be clearly visible and suitably illuminated with suitable arrangement by whatever artificial lighting adopted for this purpose, to maintain the required illumination in case of failure of the normal source of electric supply.

(f) The exits shall be marked in a language understood by the majority of the workers.

(g) Fire resisting doors or roller shutters shall be provided at appropriate places along the escape routes to prevent spread of fire and smoke, particularly at the entrance of lifts or stairs where funnel or flue effect may be created inducing an upward spread of fire.

(h) All exits shall provide continuous means of access to the exterior of a building or to an exterior open space leading to a street.

(i) Exits shall be so located that the travel distance on the floor shall not exceed 30 metres.

(j) In case of those factories where high hazard materials are stored or used, the travel distance to the exit shall not exceed 22.5 metres and there shall be at least two ways of escape from every room, howsoever small, except toilet rooms, so located that the points of access thereto are out of or suitably shielded from areas of high hazard.

(k) Wherever more than one exit is required for any room space or floor, exits shall be placed as remote from each other as possible and shall be



arranged to provide direct access in separate directions from any point in the area served.

(l) The unit of exit width used to measure capacity of any exit shall be 50 cm. A clear width of 25 cm. shall be counted as an additional half unit. Clear width of less than 25 cm. shall not be counted for exit width.

(m) Occupants per unit width shall be 50 for stairs and 75 for doors.

(n) For determining the exits required, the occupant load shall be reckoned on the basis of actual number of occupants within any floor area or 10 square metres per person, whichever is more.

(o) There shall not be less than two exits serving every floor area above and below the ground floor, and at least one of them shall be an internal enclosed stairway.

(p) For every building or structure used for storage only, and every section thereof considered separately, shall have access to at least one exit so arranged and located as to provide a suitable means of escape for any person employed therein, and in any such room wherein more than 10 persons may be normally present, at least two separate means of exit shall be available, as remote from each other as practicable.

(q) Every storage area shall have access to at least one means of exit which can be readily opened.

(r) Every exit doorway shall open into an enclosed stairway, a horizontal exit on a corridor or passageway providing continuous and protected means of egress.

(s) No exit doorway shall be less than 100 cm. in width and not less than 200 cm. in height.

(t) Exit doorways shall open outwards, that is, away from the room but shall not obstruct the travel along any exit. No door when opened, shall reduce the required width of stairway or landing to less than 90 cm. Overhead or sliding doors shall not be installed for this purpose.

(u) An exit door shall not open immediately upon a flight of stairs. A landing equal to at least the width of the doorway shall be provided in the stairway at each doorway. The level of landing shall be the same as that of the floor which it serves.

(v) The exit doorways shall be openable from the side which they serve without the use of a key.

(w) Exit corridors and passageways shall be of a width not less than the aggregate required width of exit doorways leading from there in the direction of travel to the exterior.

(x) Where stairways discharge through corridors and passageways, the height of the corridors and passageways shall not be less than 2.4 metres.

(y) Internal stairs shall be constructed of non-combustible materials throughout.

(z) Internal stairs shall be constructed as a self-contained unit with at least one side adjacent to an external wall and shall be completely enclosed.

(aa) A staircase shall not be arranged around a lift shaft unless the latter is totally enclosed by a

material having a fire-resistance rating not lower than that of the type of construction of the former.

(bb) Hollow combustible construction shall not be permitted.

(cc) The minimum width of an internal staircase shall be 100 cm.

(dd) The minimum width of treads without nosing shall be 25 cm. for an internal staircase. The treads shall be constructed and maintained in a manner to prevent slipping.

(ee) The maximum height of a riser shall be 19 cm. and the number of risers shall be limited to 12 per flight.

(ff) Hand rails shall be provided with a minimum height of 100 cm. and shall be firmly supported.

(gg) The use of spiral staircase shall be limited to low occupant load and to a building of height of 9 metres, unless they are connected to platform such as balconies and terraces to allow escapees to pause. A spiral staircase shall be not less than 300 cm. in diameter and have adequate head room.

(hh) The width of a horizontal exit shall be the same as for the exit doorways.

(ii) The horizontal exit shall be equipped with at least one fire door of self closing type.

(jj) The floor area on the opposite or refuge side of a horizontal exit shall be sufficient to accommodate occupants of the floor areas served, allowing not less than 0.3 square metre per person. The refuge area shall be provided with exits adequate to meet the requirements of this sub-rule. At least one of the exits shall lead directly to the exterior or street.

(kk) Where there is difference in level between connected areas for horizontal exit, ramps not more than 1 in 8 slope shall be provided. For this purpose stops shall not be used.

(ll) Doors in horizontal exits shall be openable at all times.

(mm) Ramps with a slope of not more than 1 in 10 may be substituted for the requirements of staircase. For all slopes exceeding 1 in 10 and wherever the use is such as to involve danger of slipping, the ramp shall be surfaced with non-slipping material.

(nn) In any building not provided with automatic fire alarm a manual fire alarm system shall be provided if the total capacity of the building is over 500 persons, or if more than 25 persons are employed above or below the ground floor, except that no manual fire alarm shall be required in one-storey buildings where the entire area is undivided and all parts thereof are clearly visible to all occupants.

#### (11) *First-aid-fire fighting arrangements —*

(a) In every factory there shall be provided and maintained adequate and suitable fire fighting equipment for fighting fires in the early stages, (hereinafter referred to as first-aid fire fighting equipment) in this rule.

(b) The types of first-aid fire fighting equipment to be provided shall be determined by consi-



dering the different types of fire risks which are classified as follows:—

(i) "*Class A fire*" — Fire due to combustible materials such as wood, textiles, paper, rubbish and the like.

1. "*Light hazard*" — Occupancies like offices, assembly halls, canteens, rest-rooms, ambulance rooms and the like;

2. "*Ordinary hazard*" — Occupancies like saw mills, carpentry shop, small timber yards, book binding shops, engineering workshop and the like;

3. "*Extra hazard*" — Occupancies like large timber yards, godowns storing fibrous materials, flour mills, cotton mills, jute mills, large wood working factories and the like;

(ii) "*Class B fire*" — Fire due to inflammable liquids like oil, petroleum products, solvents, grease, paint, etc.

(iii) "*Class C fire*" — Fire arising out of gaseous substances.

(iv) "*Class D fire*" — Fire arising from reactive chemicals, active metals and the like.

(v) "*Class E fire*" — Fire involving electrical equipment and delicate machinery and the like.

(c) The number and types of first-aid fire fighting equipment to be provided shall be as per the following scale:

(i) *Class A fire* —

1. *Light hazard* — One 9 litre water bucket for every 100 square metres of floor area or part thereof and one 9-litre water type (soda-acid or gas pressure or bucket pump) extinguisher shall be provided for each 6 buckets or part thereof with a minimum of one extinguisher and two buckets per compartment of the building. These equipment shall be so distributed over the entire floor areas that a person shall have to travel not more than 25 metres from any point to reach the nearest equipment.

2. *Ordinary hazard* — One 9-litre water bucket for every 100 square metres of floor area or part thereof and one 9-litre water type (soda-acid, gas pressure or bucket pump) extinguisher shall be provided for each six buckets or part thereof, with a minimum of 2 extinguishers and 4 buckets per compartment of the building. These equipment shall be so distributed over the entire floor area that a person shall have to travel not more than 15 metres from any point to reach the nearest equipment.

3. *Extra hazard* — The scale of equipment would be what is prescribed for ordinary hazard and, in addition, such extra equipment as, in the opinion of the Inspector, are necessary having regard to the special nature of occupancy.

Provided that in special cases, the Inspector, after taking into consideration the circumstances, authorise that the buckets prescribed in

this clause may be dispensed with, provided the number of the extinguishers provided is double than that what is prescribed.

(ii) *Class B fire* — There shall be at least one fire extinguisher either foam type or carbon dioxide or dry powder type per 50 square metres of floor area and shall be so distributed that no person is required to travel more than 15 metres from any point to reach the nearest equipment. In addition to the requirements of extinguishers specified here, requirements as laid down in clause (i) shall also be provided.

(iii) *Class C fire* — Carbon dioxide or dry chemical powder extinguishers shall be provided near each plant or group of plants.

(iv) *Class D fire* — Special dry powder (chloride based) type of extinguishers, or sand buckets shall be provided on a scale as laid down for *Class B fire*. The Inspector may require a higher scale of portable equipment to be provided depending upon the risk involved.

(v) *Class E fire* — Carbon dioxide or dry powder type extinguishers shall be provided near each plant or group of plants depending upon the risk involved.

(d) The first-aid fire fighting equipment shall conform to the relevant Indian Standards.

(e) As far as possible the first-aid fire fighting equipment shall all be similar in shape and appearance and shall have the same method of operation.

(f) All first-aid fire fighting equipment shall be placed in a conspicuous position and shall be readily and easily accessible for immediate use. Generally, these equipment shall be placed as near as possible to the exits or stair landing or normal routes of escape.

(g) All water buckets and bucket pump type extinguishers shall be filled with clean water. All sand buckets shall be filled with clean, dry and fine sand.

(h) All other extinguishers shall be charged appropriately in accordance with the instructions of the manufacturer.

(i) Each first-aid fire fighting equipment shall be allotted a serial number by which it shall be referred to in the records. The following details shall be painted with white paint on the body of each equipment:

1. Serial number.
2. Date of last refilling; and
3. Date of last inspection.

(j) First-aid fire fighting equipment shall be placed on platforms or in cabinets in such a way that their bottom is 750 m. above the floor level. Fire buckets shall be placed on hooks attached to a suitable stand or wall in such a way that their bottom is 750 m. above the floor level. Such equipment if placed outside the building, shall be under sheds or covers.

(k) All extinguishers shall be thoroughly cleaned and recharged immediately after discharge. Sufficient refill material shall be kept readily available for this purpose at all times.

(1) All first-aid fire fighting equipment shall be subjected to routine maintenance, inspection and testing to be carried out by properly trained persons. Periodicity of the routine maintenance, inspection and test shall conform to the relevant Indian Standards.

(12) *Other fire fighting arrangements* — (a) In every factory, adequate provision of water supply for fire fighting shall be made and where the amount of water required in litres per minute, as calculated from the formula  $A + B + C + D$  divided by 20 is 550 or more, power driven trailer pumps of adequate capacity to meet the requirement of water as calculated above shall be provided and maintained.

In the above formula —

- A = the total area in square metres of all floors including galleries in all buildings of the factory;
- B = the total area in square metres of all floors and galleries including open spaces in which combustible materials are handled or stored;
- C = the total area in square metres of all floors over 15 metres above ground level; and
- D = the total area in square metres of all floors of all buildings other than those of fire resisting construction.

Provided that in areas where the fire risk involved does not require use of water, such areas under B, C, and D may, for the purpose of calculation, be halved:

Provided further that where the areas under B, C or D are protected by permanent automatic fire fighting installations approved by any fire association or fire insurance company, such areas may, for the purpose of calculation, be halved:

Provided also that where the factory is situated at not more than 3 kilometres from an established city or town fire service, the pumping capacity based on the amount of water arrived at by the formula above may be reduced by 25%; but no account shall be taken of this reduction in calculating water supply required under clause (a).

(b) Each trailer pump shall be provided with equipment as per Schedule appended to this rule. Such equipment shall conform to the relevant Indian Standards.

(c) Trailer pumps shall be housed in a separate shed or sheds which shall be sited close to a principal source of water supplies in the vicinity of the main risks of the factory.

(d) In factories where the area is such as cannot be reached by man-hauling of trailer pumps within reasonable time vehicles with towing attachment shall be provided at the scale of one for every four trailer pumps with a minimum of one such vehicle kept available at all times.

(e) Water supply shall be provided to give flow of water as required under clause (a) for at least 100 minutes. At least 50% of this water supply or 450,000 litres whichever is less, shall be in the form of static tanks of adequate capacities (not less than 450,000 litres each) distributed round the factory

with due regard to the potential fire risks in the factory. (Where piped supply is provided, the size of the main shall not be less than 15 centimetres diameter and it shall be capable of supplying a minimum of 4500 litres per minute at a pressure of not less than 7 kilograms per square centimetre).

(f) All trailer pumps including the equipment provided with them and the vehicles for towing them shall be maintained in good condition and subjected to periodical inspection and testing as required.

(13) *Personnel in charge of equipment and for fire fighting, fire drills, etc.* — (a) The first-aid and other fire fighting equipment to be provided as required in sub-rules (11) and (12) shall be in charge of a trained responsible person.

(b) Sufficient number of persons shall be trained in the proper handling of fire fighting equipment as referred to in clause (a) and their use against the types of fire for which they are intended in order to ensure that adequate number of persons are available for fire fighting both by means of first-aid fire fighting equipment and other equipment. Wherever vehicles with towing attachment are to be provided as required in clause (d) of sub-rule (12) sufficient number of persons shall be trained in driving these vehicles to ensure that trained persons are available for driving them whenever the need arises.

(c) Fire fighting drills shall be held at least once in every 3 months.

(14) Automatic sprinklers and fire hydrants shall be in addition and not in substitution of the requirements in sub-rules (11) and (12).

(15) If the Chief Inspector is satisfied in respect of any factory or any part of the factory that owing to the exceptional circumstances such as inadequacy of water supply or infrequency of the manufacturing process or for any other reason, to be recorded in writing, all or any of the requirements of the rules are impracticable or not necessary for the protection of workers, he may by order in writing (which he may at his discretion revoke) exempt such factory or part of the factory from all or any of the provisions of the rules subject to conditions as he may by such order prescribe.

## SCHEDULE

### Equipment to be provided with trailer pump

For light trailer pump of a capacity of 680 litres/minute

- 1 Armoured suction hose of 9 metres length, with wrenches.
- 1 Metal suction strainer.
- 1 Basket strainer.
- 1 Two-way suction collecting-head.
- 1 Suction adaptor.
- 10 Unlined or rubber lined 70 m. delivery hose of 25 metres length complete with quick-release couplings.
- 1 Dividing breaching-piece.
- 2 Brand-piece with 15 m. nozzles.
- 1 Diffuser nozzle.
- 1 Standpipe with blank cap.
- 1 Hydrant key.

- 4 Collapsible canvas buckets.
- 1 Fire hook (preventor) with cutting edge.
- 1 25 m. manila rope of 30 metres length.
- 1 Extension ladder of 9 metres length (where necessary).
- 1 Heavy axe.
- 1 Spade.
- 1 Pick axe.
- 1 Crowbar.
- 1 Saw.
- 1 Hurricane lamp.
- 1 Electric torch.
- 1 Pair of rubber gloves.

For large trailer pump of a capacity of 1800 litres/minute

- 1 Armoured suction hose of 9 metres length, with wrenches.
- 1 Metal strainer.
- 1 Basket strainer.
- 1 Three-way suction collecting head.
- 1 Suction adaptor
- 14 Unlined or rubber lined 70 m. delivery hose of 25 metres length complete with quick-release couplings.
- 1 Dividing breaching-piece.
- 4 Branch pipes with one 25 m. two 20 m. and one diffuser nozzles.
- 2 Standpipe with blank caps.
- 2 Hydrant keys.
- 6 Collapsible canvas buckets.
- 1 Ceiling hook (preventor) with cutting edge.
- 1 50 m. manila rope of 30 metres length.
- 1 Extension ladder of 9 metres length (where necessary).
- 1 Heavy axe.
- 1 Spade.
- 1 Pick axe.
- 1 Crowbar.
- 1 Saw.
- 1 Hurricane lamp.
- 1 Electric torch.
- 1 Pair of rubber gloves.

**NOTE:** If it appears to the Chief Inspector of Factories that in any factory the provision of breathing apparatus is necessary he may by order in writing require the occupier to provide suitable breathing apparatus in addition to the equipment for light trailer pump or large trailer pump as the case may be.

Rule prescribed under Section 40-B:

#### 74. Safety Officers. — (1) Qualifications —

(a) A person shall not be eligible for appointment as a Safety Officer unless he —

(i) possesses —

(aa) a recognised degree in any branch of engineering or technology and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 2 years; or

(bb) a recognised degree in physics or chemistry and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 5 years; or

(cc) a recognised diploma in any branch of engineering or technology and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 5 years;

(ii) possesses a degree or diploma in industrial safety recognised by the Government in this behalf; and

(iii) had adequate knowledge of the language spoken by majority of the workers in the region in which the factory where he is to be appointed is situated.

(b) Notwithstanding the provisions contained in clause (a), any person who —

(i) possesses a recognised degree or diploma in engineering or technology or a degree in physics or chemistry and has had experience of not less than 5 years in a department of the Central or State Government which deals with the administration of the Factories Act, 1948 or the Indian Dock Labourers Act, 1934; or

(ii) possesses a recognised degree or diploma in engineering or technology or a degree in physics or chemistry and has had experience of not less than 5 years, full time, on training, education, consultancy or research in the field of accident prevention in industry or in any institution or Government department;

shall also be eligible for appointment as a Safety Officer:

Provided that the Chief Inspector may, subject to such conditions as he may specify, grant exemption from the requirements of this sub-rule, if in his opinion, a suitable person possessing the necessary qualifications and experience is not available for appointment.

Provided further that, in the case of a person who has been working as a Safety Officer for a period of not less than 3 years on the date of commencement of this rule, the Chief Inspector may, subject to such conditions as he may specify, relax all or any of the above said qualifications.

(2) *Conditions of service* — (a) Where the number of Safety Officers to be appointed in a factory as required by a notification in the Official Gazette exceeds one, one of them shall be designated as the Chief Safety Officer and shall have a status higher than that of the others. The Chief Safety Officer shall be in overall charge of the safety functions as envisaged in sub-rule (3), the other Safety Officers shall be working under his control.

(b) The Chief Safety Officer or the Safety Officer in the case of factories where only one Safety Officer is required to be appointed, shall be given the status of a senior executive and he shall work directly under the control of the chief executive of the factory. All other Safety Officers shall be given appropriate status to enable them to discharge their functions effectively.

(c) The scale of pay and the allowances to be granted to the Safety Officers including the Chief Safety Officer, and the other conditions of their service shall be the same as those of the other officers of

corresponding status in the factory, i. e. those officers reporting directly to the Chief Executive.

(d) In the case of dismissal or discharge, a Safety Officer shall have a right to appeal to the State Government whose decision thereon shall be final.

(3) *Duties of Safety Officers* — (a) The duties of a Safety Officer shall be to advise and assist the factory management in the fulfilment of its obligations, statutory or otherwise, concerning prevention of personal injuries and maintaining a safe working environment. These duties shall include the following, namely —

(i) to advise the concerned departments in planning and organising measures necessary for the effective control of personal injuries;

(ii) to advise on safety aspects in all job studies, and to carry out detailed job safety studies of selected jobs;

(iii) to check and evaluate the effectiveness of the action taken or proposed to be taken to prevent personal injuries;

(iv) to advise the purchasing and stores department in ensuring the availability of high quality personal protective equipment;

(v) to provide advice on matters related to carrying out plant safety inspections;

(vi) to carry out plant safety inspections in order to observe the physical conditions of work and the work practices and procedures followed by workers and to render advice on measures to be adopted for removing the unsafe physical conditions and preventing unsafe actions by workers;

(vii) to render advice on matters related to reporting and investigation of industrial accidents and diseases;

(viii) to investigate selected accidents;

(ix) to investigate the cases of industrial diseases contracted and dangerous occurrences reportable under rule 132;

(x) to advise on the maintenance of such records as are necessary relating to accidents, dangerous occurrences and industrial diseases;

(xi) to promote setting up of safety committees and to act as adviser and catalyst to such committees;

(xii) to organise in association with the concerned departments, campaigns, competitions, contests and other activities which will develop and maintain the interest of the workers in establishing and maintaining safe conditions of work and procedures; and

(xiii) to design and conduct either independently or in collaboration with the training department, suitable training and educational programme for the prevention of personal injuries.

(4) *Facilities to be provided to Safety Officers* — An occupier of the factory shall provide each Safety Officer with such facilities, equipment and information as are necessary to enable him to discharge his duties effectively.

(5) *Prohibition of performance of other duties* — No Safety Officer shall be required or permitted to do any work which is inconsistent with or detrimental to the performance of the duties prescribed in sub-rule (3).

Rules prescribed under Section 41:

**75. Buildings and structures.** — No building, wall, chimney, bridge, tunnel, road, gallery, stairway, ramp, floor, platform, staging, or other structure, whether of a permanent or temporary character, shall be constructed, situated or maintained in any factory in such a manner as to cause risk of bodily injury.

**76. Machinery and Plant.** — No machinery, plant or equipment shall be constructed, situated, operated or maintained in any factory in such a manner as to cause risk of bodily injury.

**77. Methods of work.** — No process or work shall be carried in any factory in such a manner as to cause risk of bodily injury.

**78. Stacking and storing of materials, etc.** — No materials or equipment shall be stacked or stored in such a manner as to cause risk of bodily injury.

**79. Ladders.** — All ladders used in replacing belts shall be specially made and reserved for that work and provided with hooks or an effective non-kid device. Ladders provided with hooks must have hooks fitted in such suitable position that they rest on the shaft when the bottom end of the ladder is resting on the floor.

**80. Protection of workers attending to prime movers.** — (1) In every factory the work of oiling or attending to prime movers shall be done only by a specially trained adult male worker authorised to do such work whose name has been recorded in the register maintained in Form 10.

(2) Every such worker while oiling or attending to a prime mover shall wear tight-fitting clothing.

(3) A worker required to wear tight-fitting clothing under sub-rule (2) shall be provided by the occupier with clothing which shall consist of at least a pair of closely fitting shorts and a closely-fitting half-sleeve shirt or vest. Such clothing shall be returned to the occupier on termination of service or when new clothing is provided.

**81. Water-sealed gasholder.** — (1) The expression "gasholder" means a water-sealed gasholder which has a storage capacity of not less than 141.5 cubic metres.

(2) Every gasholder shall be of adequate material and strength of sound construction and properly maintained.

(3) Where there is more one gasholder in a factory, every gasholder shall be marked in a conspicuous position with a distinguishing number or letter.

(4) Every gasholder shall be thoroughly examined externally by a competent person at least once in a period of 12 months.

(5) In the case of gasholder of which any lift has been in use for more than 10 years, the internal state

of the sheeting shall, within one year of the coming into operation of these rules and thereafter at least once in every period of four years, be examined by a competent person by means of electronic or other accurate devices:

Provided that if the Chief Inspector is satisfied that such electronic or other accurate devices are not available, he may permit the cutting of samples from the crown end the sides of the holder:

Provided further that if the above examination raises a doubt, an internal visual examination shall be made.

(6) All possible steps shall be taken to prevent or minimise ingress of impurities in the gasholder.

(7) No gasholder shall be repaired or demolished except under the direct supervision of a person who, by his training, experience and knowledge of the necessary precautions against risks of explosion and of persons being overcome by gas, is competent to supervise such work.

(8) (a) All sample discs cut under sub-rule (5) above shall be kept readily available for inspection.

(b) A permanent register in Form 14 duly signed by the occupier or manager shall be maintained.

(c) The results of examinations by the competent person carried out as required under sub-rules (4) and (5) shall be recorded in Form 15.

(d) A copy of the report in Form 14 shall be kept in the register in Form 13 and both the register and the report shall be readily available for inspection.

(9) The Inspector of Factories shall inspect the gasholder at least once in a period of 12 months.

#### Rules Prescribed under Sections 41 and 112:

**82. Use of polymerising machines in the printing departments of cotton textile mills.**—(1) The following precautions shall be taken when fabrics are processed in polymerising or curing machine for fixing prints by the emulsion technique, namely,—

(a) printed fabrics shall be thoroughly dried by passing them over drying cans or through a hot flue or other equally effective means, before the same are allowed to pass through the polymerising machine;

(b) the exhaust flap or damper shall be provided with a hole or opening so that at least two-third of it is always open;

(c) infra-red ray heaters of the machines shall be cut off while running the prints;

(d) the electrical heater shall be connected to a separate circuit and shall be provided with an isolation switch so as to ensure that it is completely cut off in an emergency;

(e) the electrical heater shall be so located that if there is any dropping of the solvent due to condensation, it does not directly come in contact with the heaters;

(f) the drive of the exhaust fan shall be interlocked with the main drive of the machine in such a way that if the exhaust motor stops, the machine including all heating devices shall also stop;

(g) the electrical heater shall have thermostats to regulate the temperature so that the heaters shall automatically cut off, if the temperature rises above the pre-set value;

(h) adequate flaps shall be provided on top of the machine which can open and let off the fumes outside the workroom in case of an explosion or in case any pressure is built up;

(i) filter gauze shall be cleaned at least once a week;

(j) exhaust duct shall be cleaned at least once a week; and

(k) tension of the V-belt drive of the fans shall be checked every week.

(2) The machine shall be examined under the direct supervision of a responsible person designated by the occupier or manager, who by his experience and knowledge of necessary precautions against risks of explosion, is fit to supervise such work.

(3) A register shall be maintained in which the details of the various checks carried under sub-rule (2) shall be entered and every entry made therein shall be signed by the person making the checks.

**83. Shipbuilding and ship-repairing.**—(1) Application—This rule shall apply as respects work carried out in any of the operations as defined in sub-rule (2).

(2) *Definitions.*—In this rule unless there is anything repugnant to the subject or context,—

(a) "certificate of entry" means a certificate which is given by a person who is a competent analyst and who is competent to give such certificates, and certifies that he has in an adequate and suitable manner tested the atmosphere in the oil-tank or oil-tanks specified in the certificate and found that having regard to all the circumstances of the case, including the likelihood or otherwise of the atmosphere being or becoming dangerous, entry to the oil-tank or oil-tanks without wearing breathing apparatus may in his opinion be permitted;

(b) "hot work" means any work which involves—

(i) welding, burning, soldering, brazing, sand blasting or chipping by spark producing tools; or

(ii) use of non-flameproof electrical equipment or equipment with internal combustion engines;

and includes any other work which is likely to produce sufficient heat capable of igniting inflammable gases or vapours;

(c) "naked light certificate" means a certificate which is given by a person who is a competent analyst and who is competent to give such certificates, and certifies that he has in an adequate and suitable manner, tested for the presence of inflammable vapour in the oil-tank, compartment, space or other part of the vessel specified in the certificate and found it to be free therefrom and that having regard to all the circumstances of the case including the likelihood or otherwise of the

atmosphere becoming inflammable, the use of naked lights, fires, lamps, or heated rivets or any hot work to be carried out may in his opinion be permitted in the oil-tank, compartment, space or other part of the vessel specified in the certificates;

(d) "oil" means any liquid which has a flash point below 132 degrees centigrade and also includes lubricating oils, liquid methane, liquid butane and liquid propane;

*Explanation.* — Flash point wherever it occurs in this rule shall be flash point as determined by Abel Closed Cup or Pensky-Marten Closed Cup procedures as described in I. S. 1448-1960.

(e) "oil-tank" means any tank or compartment in which oil is or has been carried;

(f) "the operation" means —

(i) construction, reconstruction or breaking up of any ship or vessel, repairing, refitting, painting and finishing;

(ii) the scaling, scurfing or cleaning of its boilers (including combustion chambers or smoke bores); and

(iii) the cleaning of its bilges or oil-fuel tanks or any of its tanks last used for carrying oil.

For the purpose of this definition the expression "oil" means oil of any description whether or not oil within the meaning of foregoing definition of that expression;

(g) "ship and vessel" shall have the same meanings as assigned to them in the Merchant Shipping Act, 1958;

(h) "shipyard" means any yard or dry dock (including the precincts thereof) in which ships or vessels are constructed, reconstructed, repaired, refitted or finished;

(i) "stage" means any temporary platform on or from which persons employed perform work in connection with the operations, but does not include a boatswain's chair;

(j) "staging" includes any stage, and any upright, thwart, thwart pin, wedge, distance piece, belt or other appliance or material, not being part of the structure of the vessel, which is used in connection with the support of any stage, and any guard-rails connected with a stage, and

(k) "tanks" means a vessel constructed or adopted for carrying a cargo of oil in bulk.

#### ACCESS AND STAGING

(3) *General access to vessels in a shipyard* — All main gangways giving general access to a vessel in a shipyard, whether from the ground or from a wharf or quay and all cross gangways leading from such a main gangway on to the vessel, shall —

(a) be at least 60 centimetres wide;

(b) be securely protected on each side to a height of at least 90 centimetres by strongly constructed upper and lower hand-rails and by a secure toe-board projecting at least 15 centimetres above the floor;

(c) be of good construction, sound material and adequate strength;

(d) be stable and, wherever practicable, of permanent construction;

(e) be kept in position as long as required; and

(f) maintained in good repair.

(4) *Access to dry dock.* — (a) Every flight of steps giving access from ground level either to an altar or to the bottom of a dry dock shall be provided throughout on each side with a substantial hand-rail. In the case of an open side, secure fencing to a height of at least 90 centimetres shall be provided by means of upper and lower rails, taut ropes or chains, or by other equally safe means. For the purposes of this clause a flight of steps which is divided into two by a chute for materials, with no space between either side of the chute and the steps, shall be deemed to be one flight of steps.

(b) Such hand-rails and fencing as aforesaid shall be kept in position save when and to the extent to which their absence is necessary (whether or not for the purposes of the operations) for the access of persons, or for the movement of materials or vessels or for traffic or working, or for repair, but hand-rails or fencing removed for any of these purposes shall be kept readily available and shall be replaced as soon as practicable.

(5) *Access to vessels in dry dock.* — (a) If a ship is lying in a dry dock for the purpose of undergoing any of the operations, there shall be provided as means of access for the use of workers at such times as they have to pass to, or from, the ship or dry dock —

(i) where reasonably practicable one or more ship's accommodation ladders; or

(ii) one or more soundly constructed gangways or similar constructions.

(b) The means so provided shall be not less than 55 centimetres wide properly secured and fenced throughout on each side to a clear height of 90 centimetres by means of upper and lower rails, taut ropes or chains or by any other safe means, except that in the case of the ship's accommodation ladder, such fencing shall be necessary on one side only provided where the other side is properly protected by the ship's side.

(c) Where at any dry dock, there is a gangway giving access from an altar of the dock to a vessel which is in the dock for the purpose of undergoing any of the operations, and the edge of the altar is unfenced, adequate hand-holds shall be available for any length of the altar which workers commonly use when passing between the gangway and the nearest flight of steps which gives access to ground level.

(6) *Access to and from bulwarks* — Where there is a gangway leading on to a bulwark of a vessel there shall be provided —

(a) wherever practicable, a platform at the in-board end of the gangway with safe means of access therefrom to the docks; or

(b) where such a platform is not practicable, a second gangway or stairway leading from a



bulwark on the dock which are either attached to the first mentioned gangway or placed continuous to it, in which case means of access, securely protected by fencing, shall be provided from one to the other.

(7) *Access to staging, etc.* — (a) Where outside staging is erected in a shipyard, there shall be provided sufficient ladders giving direct access to the stages having regard to the extent of the staging and to the work to be done.

(b) Where a vessel is under construction or reconstruction and workers are liable to go forward or aft or athwartship across or along uncovered deck-beams, or across or along floors, sufficient planks shall be provided on these deck-beams or on these floors for the purpose of access to or from places of work, and sufficient and suitable portable ladders shall be provided so as to give access either from the ground or outer bottom plating to the top of the floor.

(c) Without prejudice to any other provision in this rule requiring a greater width, no footway or passageway constructed of planks shall be less than 45 centimetres wide.

(8) *Ladders* — (a) Subject to clauses (b) and (c) of this sub-rule, every ladder which affords a means of access, communication or support to a person shall —

(i) be soundly constructed and properly maintained; and

(ii) be of adequate strength for the purpose for which it is used and;

(iii) be securely fixed either —

(aa) as near its upper resting place as possible, or

(bb) where this is impracticable, at its base, or where such fixing is impracticable a person shall be stationed at the base of the ladder when in use to prevent it from slipping; and

(iv) unless there is other adequate hand-hold, extend to a height of at least 75 centimetres above the place of landing or the highest rung to be reached by the foot of any person working on the ladder, as the case may be, or, if this is impracticable, to the greatest practicable height;

(b) Requirements (iii) and (iv) of the preceding clause of this sub-rule shall not apply to fixed ladders of a ship or to rope ladders. Effective measures by means of roping off or other similar means shall be taken to prevent the use of fixed ladders of a ship which do not comply with requirements (i) and (ii) of this clause.

(c) Any worker who removes any ladder and sets it up in a new position shall, as regards that ladder, comply with requirements (iii) of clause (a) of this sub-rule.

(d) Rope ladders shall provide foot-hold of a depth including any space behind the ladder of not less than 12 centimetres and, so far as is reasonably practicable, suitable provision shall be made for preventing such ladders from twisting.

(9) *Lashing of ladders* — (a) A fibre rope, or a rope made with strands consisting of wire cords

covered with fibre, shall not be used to secure a ladder used for the purpose of the operations.

(b) A wire rope shall not be used to secure any such ladder unless its ends are ferruled, but this provision shall not apply in the case of an end which is so situated or protected that a person using the ladder is not liable to come into contact with it so as to suffer injury.

(10) *Material for staging* — (a) A sufficient supply of sound and substantial material and appliances shall be available in convenient place or places for the construction of staging.

(b) All planks and other materials and appliances intended to be used or re-used for staging shall be carefully examined before being taken into use or re-use in any staging. Every examination required by this clause shall be carried out by a person competent for the purpose.

(11) *Staging dry dock altars and shoring sills* —

(a) All staging and every part thereof shall be of good construction, of suitable and sound material and of adequate strength for the purpose for which it is used and shall be properly maintained, and every up-right and thwart shall be kept so fixed, secured or placed in position as to prevent, so far as is reasonably practicable, accidental displacement.

(b) All planks forming stages shall be securely fastened to prevent, them from slipping unless they extend 45 centimetres or more beyond the inside edge of the thwart or support on which they rest.

(c) All staging used in connection with the operations shall be inspected before use, and thereafter at regular and frequent intervals, by a responsible person.

(d) All dry dock altars and shoring sills on or from which persons perform work in connection with the operations shall be of sound construction and properly maintained.

(e) All parts of stages, all parts of footways or passageways constructed of planks, and all parts of dry dock altars or shoring sills, being parts on or from which persons perform work in connection with the operations, shall so far as is reasonably practicable, be kept clear of all substances likely to make foot-hold or hand-hold insecure.

(12) *Upright used for hoisting block* — (a) If any upright forming part of staging is used as a fixing for a pulley block for hoisting materials —

(i) it shall be properly housed in the ground or shall otherwise be adequately secured so as to prevent it from rising; and

(ii) It shall be suitably protected against damage by the action of the chain or wire or other means of securing the pulley block to the upright.

(b) No upright forming part of staging shall be used as an anchorage for a load pulley block, unless the upright is not likely to be displaced by such use.

(13) *Support of stages on planks*. — Planks supported on the rungs of ladders shall not be used to support stages.

(14) *Suspended stages* — (a) Stages suspended by ropes or chains shall be secured as far as possible so as to prevent them from swinging.

(b) A fibre rope, or a rope made of strands consisting of wire cores covered with fibre, shall not be used for suspending a stage except that fibre ropes may be used in the case of a stage of which the suspension ropes are reeved through blocks.

(c) Chains, ropes, blocks and other gear used for the suspension of stages shall be of sound material, adequate strength and suitable quality, and in good condition.

(d) Appropriate steps shall be taken to prevent ropes or chains used for supporting a stage from coming into contact with sharp edges of any part of a vessel.

(15) *Boatswains' chairs*. — (a) Boatswains' chair and chains, ropes or other gear used for their suspension shall be of sound material, adequate strength and suitable quality and the chains, ropes or other gear shall be securely attached.

(b) Suitable measures shall be taken to prevent where possible —

- (i) the spinning of a boatswain's chair;
- (ii) the tipping of a boatswain's chair; and
- (iii) any occupant falling therefrom.

(16) *Rising stages*. — All planks forming a rising stage at the bow end of a vessel shall be securely fastened to prevent them from slipping.

(17) *Width of staging*. — Without prejudice to the other provisions of these sub-rules, all stages shall be of sufficient width as is reasonable in all the circumstances of the case to secure the safety of the persons working thereon.

(18) *Stages from which a person is liable to fall more than 2 metres or into water*. — (a) This sub-rule applies to stages from which a person is liable to fall a distance of more than 2 metres or into water in which there is a risk of drowning

(b) Every stage to which this sub-rule applies —

(i) shall so far as is reasonably practicable be closely boarded, planked or plated;

(ii) shall be so constructed or placed that a person is not liable to fall as aforesaid through a gap in the staging not being a gap necessary and no larger than necessary having regard to the nature of the work being carried on; and

(iii) shall be at least 45 centimetres wide.

(c) Every side of a stage to which this sub-rule applies shall —

(i) if it is not a side immediately adjacent to any part of a vessel, be fenced (subject to the provisions of clauses (d) to (g) of this sub-rule) with a guard-rail or guard-rails to a height of at least 1 metre above the stage, which rail or rails shall be so placed as to prevent so far as practicable the fall of persons from the stage or from any raised standing place on the stage; or

(ii) if it is a side immediately adjacent to any part of a vessel, be placed as near as practicable

to that part having regard to the nature of the work being carried on and to the nature of the structure of the vessel.

(d) In the case of stages which are suspended by ropes or chains, and which are used solely for painting, the fencing required by sub-clause (i) of the preceding clause may be provided by means of taut guard-rope or taut guard-ropes.

(e) No side of a stage or, as the case may be, no part of the side of a stage need be fenced in pursuance of clause (c) (i) of this sub-rule in cases where, and as long as, the nature of the work being carried on makes the fencing of that side or, as the case may be, that part impracticable.

(f) Guard-rails provided in pursuance of clause (c) (i) of this sub-rule may be removed for the time and to the extent necessary for the access of persons or for the movement of materials, but guard-rails removed for either of these purposes shall be replaced as soon as practicable.

(g) Where it is not reasonably practicable to comply with the provisions of clause (c) (i) of this sub-rule, workers shall be provided with suitable safety belts equipped with life lines which are secured with a minimum amount of slack to a fixed structure.

Further precautions against falls of persons, materials and articles —

(19) *Fencing of dry docks*. — (a) Fencing shall be provided at or near the edges of a dry dock at ground level, including edges above flights of steps and chutes for materials. The height of such fencing shall be no point be less than 1 metre.

(b) Such fencing as aforesaid shall be kept in position save when and to the extent to which its absence is necessary (whether or not for the purposes of the operations) for the access of persons, or for movement of materials or vessels or for traffic or working, or for repair, but fencing removed for any of these purposes shall be kept readily available and shall be replaced as soon as practicable.

(20) *Protection of openings*. — (a) Every side or edge of an opening in a deck or tank top of a vessel, being a side or edge which may be a source of danger to workers shall, except where and while the opening is securely covered or where the side or edge is protected to a height of not less than 75 centimetres by a coaming or other part of the vessel, be provided with fencing to a height of not less than 90 centimetres above the edge or side and such fencing shall be kept in position save when and to the extent to which its absence is necessary (whether or not for purposes of the operations) for the access of persons, or for the movement of materials, or for traffic or working, or for repair, but fencing removed for any of these purposes shall be kept readily available and shall be replaced as soon as practicable.

(b) Clause (a) of this sub-rule shall not apply —

(i) to that part of an opening in a deck or tank top which is at the head of a stairway or ladderway intended to be used while the operations are being carried on; or

(ii) to parts of a deck or tank top which are intended to be plated, except such parts where the plating has necessarily to be delayed so that

the opening may be used for the purpose of the operations.

(21) *Fall or articles from stages.*—Where workers are at work outside a vessel on a stage adjacent to part of the structure of the vessel and other workers are at work directly beneath that stage, the planks of the stage shall be in such a position that no article liable to cause injury to the workers can fall between the planks, and the inside plank of the stage shall be placed as near as practicable to the structure of the vessel having regard to the nature of the work being carried on.

(22) *Boxes for rivets, etc.*—(a) Boxes or other suitable receptacles for rivets, nuts, bolts and welding rods shall be provided for the use of workers.

(b) It shall be the duty of the workers to use, so far as practicable, the boxes or other suitable receptacles so provided.

(23) *Throwing down materials and articles.*—(a) Subject to the provisions of clause (b) of this sub-rule, parts of staging, tools and other articles and materials shall not be thrown down from a height where they are liable to cause injury to workers, but shall be properly lowered.

(b) When the work to be done necessarily involves the throwing down from a height of articles or materials, conspicuous notice shall be posted to warn persons from working or passing underneath the place from which articles or materials may fall, or the work shall be done under the direct supervision of a competent person in authority.

(c) No person shall throw down any articles or materials from a height except in accordance with the requirements of this sub-rule.

(24) *Loose articles or materials.*—So far as practicable, steps shall be taken to minimise the risk arising from loose articles or materials being left lying about in any place from which they may fall on workers or persons passing underneath.

#### RISING AND LOWERING

(25) *Secureness of loads.*—(a) Loads shall be securely suspended or supported whilst being raised or lowered, and all reasonable precautions shall be taken to prevent danger from slipping or displacement.

(b) Where by reason of the nature or position of the operations load is liable, whilst being moved by a lifting machine or lifting tackle, to come into contact with any object so that the object may become displaced, special measures shall be adopted to prevent the danger so far as is reasonably practicable.

(26) *Support of lifting machines and lifting tackle.*—Every lifting machine and all lifting tackle shall be adequately and suitably supported or suspended having regard to the purpose for which it is used.

(27) *Wire ropes with broken wires.*—No wire rope shall be used if in any length of ten diametres the total number of visible broken wires exceeds five per cent of the total number of wires, or if the rope shows signs of excessive wear or corrosion or other serious defect.

(28) *Splices in wire ropes.*—A thimble or loop splice made in any wire rope shall have at least three tucks with a whole strand of the rope and two tucks with one half of the wires cut out of each strand. All tucks shall be against the lay of the rope:

Provided that this sub-rule shall not operate to prevent the use of another form of splice which can be shown to be as efficient as the form of splice specified in this sub-rule.

(29) *Knotted chains, etc.*—(a) No chain or wire rope shall be used when there is a knot tied in any part thereof.

(b) No chain which is shortened or joined to another chain by means of bolts and nuts shall be used:

Provided that this does not exclude the use of a chain bolted or joined to another chain by an approved and properly constructed attachment.

(30) *Precautions against damage to chains and ropes.*—Appropriate steps shall be taken to prevent, so far as practicable, the use of chains or ropes for raising or lowering in circumstances in which they are in or liable to come into contact with sharp edges of plant, materials or leads, or with sharp edges of any part of the vessel on which work is being carried out.

(31) *Loads on lifting appliances.*—No load shall be left suspended from a lifting appliance other than a self-sustaining, manually operated lifting appliance unless there is a competent person in charge of the appliance while the load is so left.

(32) *Heavy loads.*—Where there is reason to believe that a load being lifted or lowered on a lifting appliance weighs more than 20 tonnes its weight shall be ascertained by means of an accurate weighing machine or by the estimation of a person competent for the purpose, and shall be clearly marked on the load:

Provided that this sub-rule shall not apply to any load lifted or lowered by a crane which has either a fixed or a derricking jib and which is lifted with an approved type of indicator in good working order which—

(a) indicates clearly to the driver or person operating the crane when the load being carried approaches the safe working load of the crane for the radius of the jib at which the load is carried; and

(b) gives an efficient sound signal when the load moved is in excess of the safe working load of the crane at that radius.

Precautions against asphyxiation, injurious fumes or explosions.

(33) *Certification for entry into confined spaces likely to contain dangerous fumes.*—A space shall not be certified under section 36(3)(a) of the Act unless—

(a) effective steps have been taken to prevent any ingress of dangerous fumes;

(b) any sludge or other deposit liable to give off dangerous fumes has been removed and the space contains no other material liable to give off dangerous fumes; and

(c) the space has been adequately ventilated and tested for dangerous fumes and has a supply of air adequate for respiration:

Provided that no account shall be taken for the purposes of clause (b) of this sub-rule of any deposit or other material liable to give off dangerous fumes in insignificant quantities

(34) *Precautions against shortage of oxygen.* — No person shall enter or remain in any confined space in a vessel, being a confined space in which there is reason to apprehend that the proportion of oxygen in the air is so low as to involve risk of persons being overcome, unless either —

(a) the space has been and remains adequately ventilated and a responsible person has tested it and certified that it is safe for entry without breathing apparatus; or

(b) he is wearing a suitable breathing apparatus and a safety belt securely attached to a rope, the free end of which is held by a person standing outside the confined space.

(35) *Rivet fires.* — (a) Rivet fires shall not be taken into or used in or remain in any confined space on board or in a vessel unless there is adequate ventilation to prevent the accumulation of fumes.

(b) No person employed shall move a rivet fire into any confined space on board or in a vessel unless he has been authorised by his employer to move the fire into that space.

(36) *Gas cylinders and acetylene generators.* — (a) No cylinder which contains or has contained oxygen or any flammable gas or vapour at a pressure above atmospheric pressure and no acetylene generating plant, shall be installed or placed within 5 metres of any substantial source of heat (including any boiler or furnace when alight) other than the burner or blowpipe operated from the cylinder or plant.

(b) No such cylinder and no such plant shall be taken below the weather deck in the case of a vessel undergoing repair, or below the topmost completed deck in the case of a vessel under construction, unless it is installed or placed in a part of the vessel which is adequately ventilated to prevent any dangerous concentration of a gas or fumes.

(37) *Further provision as to acetylene generators.* — (a) The following provisions shall be observed as respects any acetylene generating plant: —

(i) no such plant shall be installed or placed in any confined space unless effective and suitable provision is made for securing and maintaining the adequate ventilation of that space so as to prevent, so far as practicable, any dangerous accumulation of gas;

(ii) any person attending or operating any such plant shall have been fully instructed in its working and a copy of the maker's instructions for that type of plant shall be constantly available for his use;

(iii) the charging and cleaning of such plant shall so far as practicable be done during daylight; and

(iv) partly spent calcium carbide shall not be recharged into an acetylene generator.

(b) No person shall smoke or strike a light or take a naked light or a lamp in or into any acetylene generator house or shed or in or into dangerous proximity to any acetylene generating plant in the open air or on board a vessel:

Provided that this clause shall not apply as respects a generator in the open air or on board a vessel which, since it was last charged, has been thoroughly cleaned and freed from any calcium carbide and acetylene gas.

(c) A prominent notice prohibiting smoking, naked lights and lamps shall be exhibited on or near every acetylene generating plant whilst it is charged or is being charged or is being cleaned.

(38) *Construction of plant for cutting, welding or heating metal.* — (a) Pipes or hoses for the supply of oxygen or any inflammable gas or vapour to any apparatus for cutting, welding or heating metal shall be of good construction and sound material and be properly maintained.

(b) Such pipes or hoses shall be securely attached to the apparatus and other connections by means of suitable clips or other equally effective appliances.

(c) Efficient reducing and regulating valves for reducing the pressure of the gases shall be provided and maintained in connection with all cylinders containing oxygen or any inflammable gas or vapour at a pressure above atmospheric pressure while the gases or vapours from such cylinders are being used in any process of cutting, welding or heating metal.

(d) Where acetylene gas is used for cutting, welding or heating metal —

(i) a properly constructed and efficient back-pressure valve and flame arrester shall be provided and maintained in the acetylene supply pipe between each burner or blow-pipe and the acetylene generator, cylinder or container from which it is supplied, and shall be placed as near as practicable to the burner or blow-pipe, except that these requirements shall not apply where an acetylene cylinder serves only one burner or blow-pipe; and

(ii) any hydraulic valve provided in pursuance of the preceding sub-clause shall be inspected on each day by every person who uses the burner or blow-pipe on that day and it shall be the duty of every worker who used the burner or blow-pipe to inspect the hydraulic valve accordingly.

(e) The operating valves of burners or blow-pipes to which oxygen or any inflammable gas or vapour is supplied for the purpose of cutting, welding or heating metal shall be so constructed, or the operating mechanism shall be so protected, that the valves cannot be opened accidentally.

(39) *Precautions after use of apparatus for cutting, welding or heating metal.* — (a) In the case of apparatus on board a vessel and used for

cutting, welding or heating metal with the aid of oxygen or any inflammable gas or vapour supplied at a pressure above atmospheric pressure, the precautions specified in the following clauses of this sub-rule shall be taken when such use ceases for the day or for a substantial period and the apparatus is to be left on board, but need not be taken when such use is discontinued merely during short interruption of work. The requirements in clauses (c) and (d) of this sub-rule shall not apply during a meal interval provided that responsible person is placed in charge of the plant and equipment referred to therein.

(b) Supply valves of cylinders, generators and gas mains shall be securely closed and the valve key shall be kept in the custody of a responsible person.

(c) Movable pipes or hoses used for conveying oxygen or inflammable gas or vapour and the welding and cutting torches shall, in the case of a vessel undergoing construction, be brought to the topmost completed deck, or in the case of a vessel undergoing repair, to a weather deck or in either case to some other place of safety which is adequately ventilated to prevent any dangerous concentration of gas or fumes.

Provided that where, owing to the nature of the work, it is impracticable to comply with the foregoing requirements of this clause, the pipes or hoses shall be disconnected from cylinders, generators or gas mains, as the case may be.

(d) When cylinders or acetylene generating plant have been taken below deck as permitted by clause (b) of sub-rule (36) such cylinders or acetylene generating plant shall be brought to a weather deck or, in the case of a vessel undergoing construction, to the topmost completed deck.

(40) *Naked lights and hot work oil-carrying vessels.* — (a) Subject to the provisions of clause (b) of this sub-rule and to the provisions of sub-rule (48), and without prejudice to the provisions of sub-rules (46) and (47), no naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of this sub-rule) —

(i) shall be permitted to be applied to, or to be in, or any hot work permitted to be carried out in any part of a tanker, unless, since oil was last carried in that tanker, a naked light certificate has been obtained and is in force in respect of those parts of the tanker for which, in the opinion of a competent analyst, a naked light certificate is necessary:

Provided that a naked light, fire or lamp of a kind specified in writing by a competent analyst may be applied to, or be in, or any hot work of a type specified by him carried on, any part of the tanker so specified;

(ii) shall be permitted —

(aa) to be in any oil-tank on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23 degrees centigrade or was liquid methane, liquid propane or liquid butane, nor any hot work permitted to be carried out in any such oil tank or vessel, unless a naked light certi-

ficate has previously been obtained on the same day and is in force in respect of that oil-tank and or any oil-tank, compartment or space adjacent thereto;

(bb) to be applied to the outer surface of any oil-tank on board or in a vessel in which oil-tank the oil last carried was such oil as aforesaid nor any work of such a nature which is likely to produce sufficient heat capable of igniting flammable gases or vapours permitted to be carried out on the outer surface of such oil-tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil-tank;

(cc) to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil-tank on board or in a vessel in which oil-tank the oil last carried was such oil as aforesaid, nor any hot work permitted to be carried out in such compartment or space as aforesaid, nor any work of such nature which is likely to produce sufficient heat capable of igniting flammable gases or vapours permitted to be carried out on the outer surface of such compartment or space, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that compartment or space:

Provided that where in any such case referred to in paragraphs (aa), (bb) or (cc) of this sub-clause a competent analyst has certified that daily naked light certificates are unnecessary or are necessary only to a specified extent, such a daily certificate need not be obtained or, as the case may be, need only be obtained to the specified extent;

(iii) shall be permitted to be applied to the outer surface of, or to be in, any oil-tank on board or in a vessel nor any hot work permitted to be carried out in any such oil-tank or vessel, nor any work of such nature which is likely to produce sufficient heat capable of igniting flammable gases or vapours, permitted to be carried out on the outer surface of the oil-tank or vessel, unless, since oil was last carried in that oil-tank, a naked light certificate has been obtained and is in force in respect of that oil-tank;

(iv) shall be permitted to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil-tank on board or in a vessel nor any hot work permitted to be carried out in any such compartment or space, nor any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours, permitted to be carried out on the outer surface of any such compartment or space, unless, since oil was last carried as cargo in that oil-tank, a naked light certificate has been obtained and is in force in respect of that compartment or space.

(b) Notwithstanding anything in clause (a) of this sub-rule, heated rivets may be permitted in any place without naked light certificate being in force in respect of that place if expressly so authorised by a competent analyst who certifies that after adequate and suitable testing, he is satisfied having regard to all the circumstances of the case, including



the likelihood or otherwise of the atmosphere becoming inflammable, that the place is sufficiently free from inflammable vapour; but such heated rivets shall, where practicable, be passed through tubes.

(c) No person shall introduce, have or apply naked light, fire or lamp (other than safety lamp of a type approved for the purpose of this sub-rule) into, in or to any place where they are prohibited by this sub-rule.

(d) No person shall carry out hot work or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours, in any place or any surface where they are prohibited by this sub-rule.

(e) In this sub-rule the expression 'competent analyst' means an analyst who is competent to give a naked light certificate.

(41) *Entering oil-tanks.* — (a) No person (other than an analyst entering with a view to issuing a certificate of entry) shall, unless he is wearing a breathing apparatus of a type approved for the purpose of this sub-rule, enter or remain in an oil-tank on board or in a vessel unless, since the oil-tank last contained oil, a certificate of entry has been obtained and is in force in respect of the tank.

(b) Without prejudice to clause (a) of this sub-rule, no person (other than an analyst entering as aforesaid) shall be allowed or required to enter or remain in an oil-tank on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23 degrees centigrade unless, since the oil-tank last contained oil, an analyst has certified that the atmosphere is sufficiently free from flammable mixture.

(c) The provisions of this sub-rule are without prejudice to the requirements of sub-rule (34).

(42) *Duration of certificates.* — Any naked light certificate or certificate of entry may be issued subject to a condition that it shall not remain in force after a time specified in the certificate.

(43) *Posting of certificates.* — Every occupier for whom a naked light certificate or a certificate of entry is obtained shall ensure that the certificate or a duplicate thereof is posted as soon as may be and remains posted in a position where it may be conveniently read by all persons concerned.

(44) *Maintaining safe atmosphere.* — when conditions in an oil-tank in respect of which a naked light certificate has been issued, are such that there is a possibility of oil vapour being released from residues or other sources, test shall be carried out by a competent analyst at such intervals as may be required so as to ensure that the conditions in the tank are maintained safe.

(b) Whenever hot work is carried on or a naked light, fire or lamp is allowed to be, on the weather deck over spaces, in respect of which a naked light certificate has not been issued, all covers of manholes and openings on deck and all valves (except those which are connected to high vent pipes) connecting the weather deck with the said spaces, shall be closed.

(c) A record of all the tests carried out for the purpose of sub-rules (34), (40) and (41) shall be maintained in a register which should furnish the date, time, location and results of the tests.

(45) *Cleaning of oil-tanks.* — (a) Subject to the provisions of sub-rule (48), before a test for inflammable vapour is carried out with a view to the issue of a naked light certificate for the purposes of sub-rule (40) in respect of an oil-tank on board or in a vessel, that oil-tank shall, since oil was last introduced into the tank, be cleaned and ventilated in accordance with clause (b) of this sub-rule.

(b) The said cleaning and ventilation shall be carried out by the following methods: —

(i) the oil-tank shall be treated in such manner and for such period as will ensure the vaporisation of all volatile oil;

(ii) all residual oil and any sludge or other deposit in the oil-tank shall be removed therefrom; and

(iii) after the oil-tank has been so cleaned —

(aa) all covers of manholes and other openings therein shall be removed and it shall be thoroughly ventilated by mechanical or other efficient means with a view to remove all oil vapour; and then

(bb) the interior surfaces, if any deposit remains thereon, shall be washed or scraped down.

(46) *Invalidation of certificates.* — (a) If during the course of work in, or to the outer surface of, any part of a tanker or aircraft carrier, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil vapour entering or arising in that part of the tanker or aircraft carrier, that work shall be suspended and thereafter any certificate of entry previously issued in respect of any oil-tank in that part and any naked light certificate previously issued in respect of that part shall be no longer in force.

(b) If (in the case of a vessel other than a tanker or aircraft carrier) during the course of work in any oil-tank or in any compartment or space adjacent thereto, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil vapour entering or arising in the oil-tank or in any compartment or space adjacent thereto that work shall be suspended and thereafter any certificate of entry previously issued in respect of the oil tank and any naked light certificate previously issued in respect of the oil-tank or any compartment or space adjacent thereto shall be no longer in force.

(47) *Provisions as to work in other compartments or spaces.* — (a) without prejudice to the other provisions of this rule, if the presence of oil in such quantity and in such position as to be likely to give rise to fire or explosion is detected in any part of a vessel, being a part to which this sub-rule applies and in which repairs of the following kind are to be or are being undertaken, that is to say, repairs involving the use of a naked light, fire or lamp [other than a safety lamp of a type approved for the purpose of sub-rule (40)], or involving hot work, such repairs shall not be started or continued until a



naked light certificate has been issued or, as the case may be, reissued in respect of that part of the vessel.

(b) This sub-rule shall apply to bilges, shaft tunnels, pump rooms, lamp rooms and to compartments and spaces other than those to which clause (a) (iv) of sub-rule (40) applies.

(48) *Exemptions.*—If the Chief Inspector is satisfied, by reasons of the nature of the work and the circumstances in which it is carried out, that any provisions of sub-rules (33) to (45) or part thereof can be suspended or relaxed without danger to the health or safety of any person, he may grant suspension or relaxation in writing specifying such conditions as he may consider fit. Any such suspension or relaxation may be revoked at any time.

#### PRECAUTIONS IN USE OF ELECTRICAL ENERGY

(49) *Earthing.*—Electrical energy other than that generated by an independent generating unit on board shall not be taken for use, or used in, or in connection with any of the operations unless the body of the ship is securely earthed in such a manner as to ensure an immediate and safe discharge of energy to the earth. A ship or vessel shall not be considered as securely earthed for the purpose of this sub-rule only on account of it being partly submerged in water.

(50) *Arc welding.*—(a) Electric arc welding shall not be carried on in connection with any of the operations unless separate and fully insulated welding return conductor or conductors as the case may be, of adequate electrical capacity are provided for return of the current to the transformer or generator of the welding set.

(b) The return end of the source of the welding current shall not be earthed.

(c) All work on which welding is carried on shall be securely earthed independently to an earth electrode by means of conductor or conductors as the case may be, of adequate capacity, unless all such work are connected to any structure of the ship or vessel in such a manner as to ensure adequate connection to earth as aforesaid.

(51) *Cutting of energy in certain cases.*—Electrical energy shall be cut off from all portable electric tools and manual electrode holders within any tank, compartment or space referred to in sub-rules (34) and (40) or in any other confined space during all times when such tools or holders are not in operation:

Provided that for determining whether any such portable electric tool or electrode holder is not in operation, no account shall be taken of brief interruptions of work occurring during normal working:

Provided further that energy may not be cut off from any such equipment if a responsible person is left in charge of it in such tank, compartment or space concerned:

Provided further that cutting of all electrical energy by operation of any switch or control provided on the portable tool or electrodes holder itself

should not be taken as fulfilling the requirement of this sub-rule.

#### MISCELLANEOUS SAFETY PROVISIONS

(52) *Lighting.*—All parts of a vessel and all other places where the operations are being carried on, and all approaches to such parts and to places to which a worker may be required to proceed in the course of his employment, shall be sufficiently and suitably lighted. In providing such lighting, due regard shall be given to avoidance of glare and formation of shadows, to the safety of the vessel and cargo, of the navigation of other vessels, and to any local statutory requirements as to the lighting of the harbour or dock.

(53) *Work in boilers, etc.*—(a) No work shall be permitted in any boiler, boiler-furnace or boiler-flue until it has been sufficiently cooled to make work conditions safe for the workers.

(b) Before any worker enters any steam boiler which consists of a range of two or more steam boilers—

(i) all inlets through which steam or hot water might otherwise enter the boiler from any other part of the range shall be disconnected from that part; or

(ii) all valves or taps controlling such entry shall be closed and securely locked.

(c) While workers remain in any steam boiler to which clause (b) of this sub-rule applies, all such inlets as are referred to in that clause shall remain disconnected or all such valves or taps as are therein referred to shall remain closed and securely locked.

(d) No worker shall be allowed or required to enter or remain in, and no person shall enter or remain, in any steam boiler to which clause (b) of this sub-rule applies unless the provisions of that clause are being complied with.

(54) *Hatch beams.*—The hatch beams of any hatch in use for the operations shall, if not removed, be adequately secured to prevent their displacement.

(55) *Jumped-up bolts.*—Bolts which have been jumped-up and re-screwed shall not be used for securing plates on the sides of vessels, and no worker shall use such bolts for this purpose.

(56) *Work in or on life boats.*—(a) Before workers are permitted to work in or on any life boat, either stowed or in suspended position, precautions shall be taken to prevent the boat from falling due to accidental tripping of the releasing gear or movement of the devils, and capsizing of the boat if in checks.

(b) Workers shall not be permitted to remain in life boats while the life boats are being hoisted into final stowed position.

#### PROTECTIVE WEAR

(57) *Hand protection.*—Adequate protection for the hands shall be available for all workers when using cutting or welding apparatus to which oxygen or any inflammable gas or vapour is supplied at a pressure greater than atmospheric pressure or when engaged in machine caulking or machine riveting or

in transporting or stacking plates or in handling plates at machines.

(58) *Protection in connection with cutting or welding.* — (a) Suitable goggles fitted with tinted eye-pieces shall be provided and maintained for all persons employed when using cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at a pressure above atmospheric pressure.

(b) There shall be provided and maintained for the use of all persons employed when engaged in the process of electric welding —

(i) suitable helmets or suitable head-shields or suitable hand shields to protect the eyes and face from hot metal and from rays likely to be injurious; and

(ii) suitable gauntlets to protect the hands and fore-arms from hot metal and from rays likely to be injurious.

(c) When electric welding is in progress at any place and persons other than those engaged in that process are employed in a position where the rays are likely to be injurious to their eyes, screens, shall, where practicable, be provided at that place for the protection of those persons. Where it is not practicable to provide effective protection of these persons by screening, suitable goggles shall be provided for their use.

(59) *Eye protection for other processes.* — Suitable goggles or effective screens shall be provided to protect the eyes of all workers in any of the following processes:

(a) the cutting out or cutting off of cold rivets or belts from boilers or other plant or from ships;

(b) the chipping, scaling or scurfing of boiler or ships' plates;

(c) drilling by means of portable machine tools; and

(d) dry grinding of metals.

(60) *Head protection.* — When workers are employed in areas where there is danger of falling objects they shall be provided with suitable safety helmets.

(61) *Safety belts and life lines.* — (a) Whenever any worker is engaged on work at a place from which he is liable to fall more than 2 metres, he shall be provided with safety belts equipped with life lines which are secured with a minimum of slack, to a fixed structure unless any other effective means such as provisions of guard rails or ropes are taken to prevent his falling.

(b) All safety belts and life lines shall be examined at frequent intervals by a competent person to ensure that no belt or life line which is not in good condition is used.

#### HEALTH AND WELFARE

(62) *Prohibition of employment of young persons in certain processes.* — No young person shall be employed in —

(a) the application of asbestos by means of a spray;

(b) the breaking down for removal of asbestos lagging;

(c) the cleaning of sacks or other containers which have contained asbestos;

(d) the cutting of material containing asbestos by means of portable power driven saws; or

(e) the scaling, scurfing or cleaning of boilers, combustion chambers or smoke boxes, where his work exposes him to dust of such a character and to such an extent as to be likely to be injurious or offensive to persons employed in such work.

(63) *Lead processes.* — (a) Lead paint shall not be applied in the form of a spray in the interior painting of any part of a ship or vessel.

(b) Wherever lead sheathing work is carried on for making cold storage chambers in the ships, efficient exhaust draughts with portable extractors should be provided to remove the lead fumes from the confined spaces.

(64) *Stretchers, ambulances and ambulance rooms, etc.* — (a) In every shipyard there shall be provided and kept readily available —

(i) a sufficient number of suitably constructed sling stretchers or other similar appliances for raising injured persons;

(ii) a sufficient number of carrying or wheel stretchers; and

(iii) a sufficient supply of suitable reviving apparatus and oxygen, and the stretchers, appliances and apparatus so provided shall be properly maintained.

(b) In every shipyard there shall always be readily available during working hours a responsible person or responsible persons whose duty it is to summon an ambulance or other means of transport if needed in cases of accident or illness. Legible copies of a notice indicating that person or, as the case may be, those persons shall be affixed in prominent positions in every shipyard.

(c) In every shipyard other than a dry dock available for hire —

(i) in which the number of persons employed normally exceeds five hundred; or

(ii) in which the number of persons employed normally exceeds one hundred and which is more than ten miles from a hospital;

there shall be provided and maintained in good order and in clean condition a properly constructed ambulance room containing at least the equipment prescribed in the rules framed under section 45 of the Act. The room shall be used only for the purpose of treatment and rest and shall be in the charge of a suitably qualified person who shall always be readily available during working hours, and record shall be kept of all cases of accident or sickness treated in the room.

#### TRAINING AND SUPERVISION

(65) *Young persons.* — (a) No young person shall, unless he has been employed in a shipyard or shipyards for at least six months, be employed in

connection with the operations in a shipyard on a stage from which, or in any part of a ship where, he is liable to fall a distance of more than 2 metres or, into water in which there is a risk of drowning.

(b) Any young person under the age of sixteen shall, when employed in the operations in shipyard, be placed under the charge of an experienced workman.

(66) *Safety supervision.* — In the case of every shipyard other than a dry dock available for hire, being a shipyard where the number of workers regularly or from time to time exceeds five hundred, a person experienced in the work of such yards shall be appointed and employed exclusively to exercise general supervision of the observance of these rules and to promote the safe conduct of the work generally.

**84. Safety measures in factories where equipment or pipelines containing inflammable materials are operated.** — Where work of opening any equipment of pipeline containing inflammable liquids or gases is to be carried out in any factory, the following provisions shall be complied with, namely: —

I. The system of work permits shall be introduced and unless the equipment or the pipeline is certified to be free of inflammable gas or liquid, no person shall be allowed to enter or open the same.

II. The work of opening such equipment or pipeline shall not be commenced unless the following operations are carried out and checked by the Supervisor in-charge of the Process Department of the Factory: —

(i) *Blanking operations.* — The equipment or pipeline to be opened for repairs or maintenance shall be effectively blanked so as to ensure that no inflammable gas or liquid can enter the same under any circumstances during the operation of repairs or maintenance. The Supervisor of the Process Department shall check personally these operations and shall certify accordingly.

(ii) *Flushing operations.* — The Supervisor of the Process Department shall carry out the steaming or flushing out with water of the equipment or pipeline to ensure that all inflammable material is removed from the equipment or pipeline and shall certify to that effect.

III. (i) *Opening of the equipment.* — The Supervisor of the Engineering Department of the factory in-charge of the work of opening of such equipment of pipeline or getting clearance from the Supervisor in-charge of the Process Department, shall satisfy himself that the above operations are complete and shall sign the work permits issued by the Supervisor of the Process Department.

(ii) It shall be the joint responsibility of the Supervisor of the Process Department and the Supervisor of the Engineering Department to check and ensure that hot lines, if any, in the vicinity of such works are properly screened, in accordance with the safety instructions of the factory management. The work permit shall have

as specific entry for this operation which shall be signed by both the Supervisors.

IV. No part of the running equipment or pipeline shall be opened unless a gas test is conducted by a responsible person to ensure that the equipment or pipeline is safe for opening.

V. No workers whose clothes have been contaminated with inflammable material shall be allowed to work where any such running equipment on pipeline is being opened.

VI. The Safety Officer or any officer authorised by him, shall have system of random checking on the work permits issued and he shall report any serious deficiencies to the Works Manager directly.

VII. All drains of such equipments or pipeline shall be laid into the drains to prevent any splashing of the drainage inflammable liquids or gases.

VIII. Before commencing the opening operation, it shall be ensured that specific person trained in fire-fighting operations, is kept available and his presence shall be ensured throughout the operation of the opening of equipment.

**85. Safety measures in gas works.** — In respect of any factory where inflammable gas is produced by carbonization of coal, oil or any other similar substance, the following provisions shall be complied with, namely —

(i) No pipe, valve or any cover of any equipment into which gas is normally allowed to flow shall be opened unless it is ensured that the equipment is no more supplied with any inflammable or explosive gas at a pressure greater than atmospheric pressure.

(ii) Before undertaking repairs of every sort to any pipe, valve or any other equipment connected with any part in the plant or machinery of any gas works (not being a gas-holder) it shall be ensured that the gas under pressure does not reach the point where such pipe, valve or equipment is being opened by the removal of any bolts and nuts or by cutting either by mechanical means or by application of heat and that such pipe, valve or equipment is so isolated from the gas-holder or any other equipment generating gas that no gas under the pressure reaches the point of repair.

(iii) Before loosening the bolts and nuts or before undertaking the cutting of any pipe, valve or equipment in any gas works, a definite test shall be carried out by a competent person that no gas under pressure is fed to the point of repair. Details of the test carried out shall be mentioned in a certificate which shall be signed by the competent person. A copy of such certificate shall be displayed prominently near the place of repair and shall be made available on demand to every worker employed in connection with such repairs for his perusal.

(iv) Every worker employed in connection with such repairs and working near any pipe, valve or other equipment while it is being opened shall be supplied with a mask and a respirator fed by air fresh from a point away from the point of repair. It shall be ensured that the worker shall

wear the respirator while working near the point of repair.

(v) Electrical wiring or any electrical equipment (not being electrical arc welding equipment) used near the point of repairs shall be so arranged that there are no trailing cables along the floor. All electrical equipment shall be of flame-proof type:

Provided that the provisions of this rule shall not apply to mains and services, plant or machinery installed in the open air subject to the following conditions:—

(a) The main or service shall be situated in the open air, and it shall contain only the following gases, separately or mixed at a pressure greater than atmospheric pressure, namely, town gas, coke-oven gas, producer gas, blast furnace gas or gases other than air, used in their manufacture;

(b) The main or service shall not contain acetylene or any gas or mixture of gases to which acetylene has been added intentionally;

(c) The operation shall be carried out by an experienced person or persons and at least two persons (including those carrying out the operations) experienced in work on gas mains and over 18 years of age shall be present during the operation;

(d) The site of the operation shall be free from any inflammable or explosive gas or vapour;

(e) Where acetylene gas is used as a source of heat in connection with an operation, it shall be compressed and contained in a porous substance in a cylinder; and

(f) Prior to the application of any flame to the gas main or service, this shall be pierced or drilled and the escaping gas ignited.

*Explanation:* (1) It shall not be considered an effective measure to stop the gas under pressure from reaching the point of repair if only an inflated bladder is used as the obstruction between the source of gas under pressure and the point of repair:

Provided that where gas valves cannot be provided, it shall be considered an effective measure to stop the gas pressure from reaching the point of repairs if inflated bags alone are inserted against gas pressures not in excess of those indicated below:—

Diameter (in) of gas main		Pressure in inches of water gauge
Upto and including 4	...	10
5 to 10	...	8
11 to 17	...	6
18 to 24	...	5
Over 24	...	3

and a competent person is kept constantly during the operation to watch and control the pressures within the limits specified as above and that

Such bags must be tested on site for soundness and at least two spare bags are made available on site.

(2) The competent person for the purpose of this rule shall be the Chief Engineer of the factory or a person certified by the Chief Engineer in writing to be the competent person.

**86. Fragile Roofs — Provision of Crawling Boards, etc.**—In any factory, no person shall be required to stand or pass over or work on or near any roof or ceiling covered with fragile material like A. C. Sheets or similar material through which he is liable to fall, in case it breaks or gives way to a distance of more than three metres unless—

(a) suitable and sufficient ladders, duck ladders or crawling boards, which shall be securely supported, are provided and used; and

(b) a permit to work on the fragile roof is issued to him each time he is required to work thereon by a responsible person of the factory concerned.

*Explanation:* Fragile material means sheets made of asbestos cement or made from similar materials such a perspex, polyester or other types of plastic fibres.

**87. Special Safety Precautions for certain highly hazardous chemical process.**—In respect of any factory engaged in carrying out any hazardous chemical processes or such parts of any processes as are specified in the Schedule annexed hereto the following provisions shall be complied with viz.:—

(1) *Process Hazards.*—Before commencing any large scale experimental works or any new manufacture, all possible steps shall be taken to ascertain definitely all the hazards involved both from the actual operations and also from the point of view of the chemical reactions. The properties of the raw materials used, the final products to be made and any byproducts arising during manufacture shall be carefully studied and adequate and suitable provisions shall be made in advance for dealing with any hazards including effects on workers which may be inherent in the process or which may arise during the process of manufacture.

(b) The plant, machinery or equipment concerned with the hazardous process shall be in-charge of such operators only who have been trained and made thoroughly conversant to be fit persons to be in-charge thereof and no other persons shall be allowed to operate the plant, machinery or equipment. The operators shall be regular employees of the occupier and shall in no case be persons who are employed as contract workers.

(c) The work of the operators shall be supervised on an overall basis by at least one competent person, who for the purpose of this sub-rule shall at least be a graduate in Chemical Engineering or Chemical Technology with specialised knowledge in respect of the processes given in the schedule:

Provided that the Chief Inspector of Factories may accept a graduate in chemistry having adequate knowledge of the process given in the Schedule and also adequate experience and training or any other qualifications, if in his opinion they are equivalent to the qualifications aforesaid.

(2) *Emergency instructions.* — Simple and special instructions shall be framed to ensure that effective measures will be carried out in cases of emergency, to deal with possible escapes of inflammable explosive, toxic or deleterious gases, vapours, liquid or dusts. These instructions shall be in the language understood by the majority of the workers and shall be displayed in bold letters at prominent places in the different sections concerned. All concerned workers shall be suitably trained and fully instructed in the prompt action to be taken in such emergencies and also in the general hazards encountered in this process.

(3) *Fire and explosion risks.* — In any part of the factory where there is a danger due to fire or explosion from inflammable gas, vapour or dust —

(i) No internal combustion engine and no electric motor or other electrical equipment or instrument capable of generating sparks or otherwise causing combustion shall be installed or used in a building engaged in the processes. All electrical fitting shall be of suitable flame-proof construction.

(ii) All pipes carrying hot exhaust or chemicals shall be installed outside the plant building and where this is not possible, these pipes including the flanged portion shall be effectively lagged.

(iii) Where an inflammable atmosphere is likely to occur the soles of footwear worn by workers shall have no metal on them and the wheels of trucks or conveyors shall be constructed of non-sparking materials. Adequate precautions shall be taken to prevent the ignition of explosive or inflammable atmosphere by sparks emitted from locomotives or other vehicles operating in the vicinity.

(iv) Portable electric hand lamps shall not be used unless of an intrinsically safe type and all portable electric tools and appliances connected by flexible wires shall not be used, unless these are of suitable flame-proof construction.

(v) No electric arc lamp or naked light fixed or portable, shall be used and no person shall have in his possession any match or any apparatus of any type for producing a naked light or spark and all incandescent electric lights shall be in double airtight covers.

(vi) Prominent notices in the languages understood by the majority of the workers and legible by day and by night, prohibiting smoking the use of naked lights and the carrying of matches or any apparatus for producing a naked light or spark shall be affixed at the entrance of every room or place where there is the risk of fire or explosion from inflammable liquid gas, vapour or dust. In the case of illiterate workers, the contents of the notices shall be fully and carefully explained to them when they commence work in the factory for the first time and again when they have completed one week of service. \*

(vii) A sufficient supply of spades, scrapers and pails made from suitable non-sparking material shall be provided for the use of persons employed in cleaning out and or removing residue from any chamber, still, tank or other vessels of material of any inflammable or explosive nature.

(viii) All machinery and plant, particularly pipe lines, belt-drives stirrer on which static electricity is likely to accumulate shall be effectively earthed. Receptacles for inflammable liquids shall have metallic connections to earthed supply tanks to prevent sparking due to static charge build up.

(4) *Additional special precautions.* — (i) The heating of the process, if required, shall not be carried out by immersion or other types of heaters deriving energy from electricity.

(ii) The steam heating coils placed in the lower part of the vessel shall never be kept uncovered or allowed to be heated dry. A substantial amount of the liquid shall be ensured in the vessel after each operation to prevent them from being dry:

Provided that in case of using vessels filled with high melting products, the steam shall be stopped/disconnected to the heating coils, before draining process is started to ensure that the heating coils are free of steam before they are uncovered.

(iii) Steam shall be supplied through a pressure reducing valve and safety valve correctly set to ensure that the critical temperature of the process is not exceeded.

(iv) A suitable rupture disc shall be provided on the vessel in addition to the usual spring-loaded safety valve. The pipe duct leading away from the rupture disc shall be taken out of the workroom. It shall be straight and without any bends in order to minimise resistance at the time of blowing and to avoid any chance of a secondary vapour/air explosion.

(v) The vent line of the vessel shall carry a flame-arrestor.

(vi) Breaking of vacuum, if the process is done under vacuum, on account of consideration of special hazards inherent in the process, shall be done only with nitrogen, other suitable inert gas or steam. Compressed air connection to the manifolds of the vessel equipment shall be avoided.

(vii) There shall be an automatic cut-off device of steam supply or other heating devices as well as of further feed to the vessel set to operate, no sooner the critical temperature is reached, beyond which the reaction, if any, in the vessels is likely to get out of control or reach run-away stage.

(viii) There shall be arrangement of such a nature that it would be possible to introduce quickly, preferably chilled water or at least ordinary cool water circulation in the steam or other heating coils, no sooner the heating element is cut-off or separate coils or jackets for this purpose shall be provided for the vessel.

(ix) An alarm system shall be provided linked to the pressure indicator of the vessel, so that automatically an audible warning will be given as soon as the pressure exceeds the present safe limit.

(x) There shall be provided an automatic arrangement of such a nature that if the mechanical agitation, where so provided, fails on account of failure of motive powers or due to broken shaft, broken blades, falling off of blades or such other contingencies, the supply of steam or other heating devices as well as further feed of material would stop automatically.



(5) *Exemptions.* — If the Chief Inspector of Factories is satisfied in respect of any factory or any process that owing to the special conditions or special methods of work adopted or by reason of the infrequency of the process or for other reasons, all or any of the requirement of this rule are not necessary for the protection of persons employed in any factory or any process, he may by order in writing (which he may in his discretion revoke at any time) exempt such factory or such process from all or any of the provisions of this rule, subject to such condition as he may by such order prescribed and he may, in his discretion add, subtract or modify such conditions as deemed fit by him at any time.

#### SCHEDULE

- (1) Nitro or Amino processes means the manufacture of nitro or amino derivative of Phenol Toluene and of Benzene or its Comologus and the making of explosives with the aid of any of these substances.
- (2) Halogenation process means the addition or substitution reaction with a wide variety of: —
  - (a) Chlorination agents and systems such as Chlorine gas, Hydrochloric Acid, Sodium/Hypochloride, Phosgene, Thionyl Chloride ( $\text{SOCl}_2$ ) Sulphonyl Chloride, ( $\text{SO}_2/\text{Cl}_2$ ) Phosphorous and such others.
  - (b) Fluorination agents such as Fluorine.
  - (c) Bromination agents such as a Bromine.
  - (d) Iodination agents such as Iodine, in liquid or gas phases.
- (3) Aromatization and Isomerization process.

**88. Reaction vessels and kettles.** — (1) This rule applies to reaction vessels and kettles, hereinafter referred to as reaction vessels, which normally work at a pressure not above the atmospheric pressure but in which there is likelihood of pressure being created above the atmospheric pressure due to reaction getting out of control or any other circumstances.

(2) In the event of the vessel being heated by electrical means, a suitable thermostatic control device shall be provided to prevent the temperature exceeding the safe limit.

(3) Where steam is used for heating purposes in a reaction vessel, it shall be supplied through a suitable pressure reducing valve or any other suitable automatic device to prevent the maximum permissible steam pressure being exceeded, unless the pressure of the steam in the supply line itself cannot exceed the said maximum permissible pressure.

(4) A suitable safety valve or rupture disc of adequate size and capacity shall be provided to effectively prevent the pressure being built up in the reaction vessel beyond the safe limit. Effective arrangements shall be made to ensure that the released gases, fumes, vapours, liquids or dusts, as the case may be, are led away and disposed off through suitable pipes without causing any hazard. Where inflammable gases or vapours are likely to be vented out from the vessel, the discharge end shall be provided with a flame arrestor.

(5) Every reaction vessel shall be provided with a pressure gauge having the appropriate range.

(6) In addition to the devices as mentioned in the foregoing provisions, means shall be provided for automatically stopping the feed into the vessel as soon as process conditions deviate from the normal limits to an extent which can be considered as dangerous.

(7) Wherever necessary, an effective system for cooling, flooding or blanketing shall be provided, for the purpose of controlling the reaction and process conditions within the safe limits of temperature and pressure.

(8) An automatic auditory and visual warning device shall be provided for clear warning whenever process conditions exceed the present limits. This device, wherever possible, shall be integrated with automatic process correction system.

(9) A notice pointing out the possible circumstances in which pressures above atmospheric pressure may be built up in the reaction vessel, the dangers involved and the precautions to be taken by the operators shall be displayed at a conspicuous place near the vessel.

#### **89. Examination of eye sight of certain works.** —

(1) No person shall be employed to operate a crane, locomotive or fork-lift truck, or to give signals to a crane or locomotive operator unless his eye sight and colour vision has been examined and declared fit by a qualified ophthalmologist to work whether with or without the use of corrective glasses.

(2) The eye sight and colour vision of the person employed as referred to in sub-rule (1) shall be examined at least once in every 12 months up to the age of 45 years and once in every 6 months beyond that age.

(3) Any fee payable for an examination of a person under this sub-rule shall be paid by the occupier and shall not be recoverable from that person.

(4) The record of examination or re-examination carried out as required under sub-rule (1) shall be maintained in Form 41.

**90. Safety Committee.** — (1) In every factory in which 250 or more workers are ordinarily employed, there shall be established a safety committee for the purpose of reviewing the measures taken to ensure the health and safety of workers and to undertake such co-ordinative functions as under the direction of the management are assigned to it for promoting health and safety of the workers.

(2) The safety committee shall consist of equal number of representatives of the management and the employees, and the minimum number of representatives shall be six.

(3) The representatives of the management shall include the manager of the factory, and the committee shall be headed by a senior official nominated by the occupier, who by his position and authority in the organisation can contribute effectively to the functions of the committee.

(4) The safety committee shall meet as often as necessary but at least once a month.

(5) Where due to the size of the factory, or any other reason, the functions referred to in sub-rule (1) cannot be effectively carried out by one safety



committee the occupier shall establish further sub-committees as may be required, and they shall function under the control and guidance of the aforesaid safety committee.

(6) The provisions of sub-rules (2) and (4) shall apply to the sub-committees wherever such committees are set up.

## CHAPTER V

### WELFARE

Rule prescribed under-section (2) of Section 42:

**91. Washing facilities.**— (1) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in clean and orderly conditions, and shall not be located in the vicinity of latrines and urinals.

Such facilities shall be conveniently located near the rest or lunch rooms in factories where such rest-rooms or lunch-rooms are required to be provided. The washing facilities shall be so enclosed or screened as to ensure privacy:

Provided that where a permanently built wall of full height is provided separating the washing facilities from the latrines and urinals, it will be treated as satisfactory compliance with the requirement of this sub-rule in regard to location of washing facilities.

(2) Without prejudice to the generality of the foregoing provisions the washing facilities shall include—

- (a) a trough with taps or jets at intervals of not less than 60 centimetres, or
- (b) wash-basins with taps attached thereto, or
- (c) taps on stand-pipes, or
- (d) showers controlled by taps, or
- (e) circular troughs of the fountain type:

Provided that the Inspector may, having regard to the needs and habits of the workers, fix the proportion in which the aforementioned types of facilities shall be installed.

(3)(a) Every trough and basin shall have a smooth, impervious surface and shall be fitted with a waste-pipe and plug.

(b) The floor or ground under and in the immediate vicinity of every trough tap, jet, wash-basin, stand-pipe and shower shall be so laid or finished as to provide a smooth impervious surface and shall be adequately drained.

(4) For persons whose work involves contact with any injurious or obnoxious substances, or who are employed in a dusty process, there shall be at least one shower controlled by tap for every 10 persons employed at a time, and each of these showers shall be enclosed separately in case of their use by women workers. For persons whose work does not involve such contact or who are not employed in dusty pro-

cesses, the number of washing facilities shall be as follows:—

Number of persons employed at a time	Number of washing facilities
Up to 200	...One for every 20 or part thereof.
Exceeding 200	...10+one for every 50 or part thereof.

(5) If female workers are employed, separate washing facilities shall be provided and so enclosed of screened that the interiors are not visible from any place where persons of the other sex work or pass. The entrance to such facilities shall bear conspicuous notice in the language understood by the majority of the workers "For Women Only" and shall also be indicated pictorially.

(6) The water supply to the washing facilities shall be capable of yielding at least thirty litres a day for each person employed in the factory and shall be from a source approved in writing by the Health Officer:

Provided that where the Chief Inspector is satisfied that such an yield is not practicable, he may by certificate in writing permit the supply of a smaller quantity not being less than five litres per day for every person employed in the factory.

**92. Facilities for keeping clothing.**— All classes of factories mentioned in the Schedule annexed hereto shall provide facilities for keeping clothing not worn during working hours and for the drying of wet clothing. Such facilities shall include the provisions of separate rooms, pegs, locker or other arrangements approved by the Chief Inspector of Factories.

### SCHEDULE

Glass works.  
Engineering workshops.  
Iron and steel works.  
Oil mills.  
Chemical works.  
Automobile workshops.  
Dyeing works.

Rule prescribed under sub-section (1) of Section 45:

**93. First-aid appliances.**— The first-aid boxes or cupboards shall be distinctively marked with a red cross on white background and shall contain the following equipment:—

(A) For factories in which the number of persons employed does not exceed ten, or (in the case of factories in which mechanical power is not used) does not exceed fifty persons, each first-aid box or cupboard shall contain the following equipment:—

- (i) Six small size sterilised dressings;
- (ii) Three medium size sterilised dressings;
- (iii) Three large size sterilised dressings;
- (iv) Three large size sterilised burn dressings;

- (v) One (60 ml.) bottle of catrimide solution (1%) or a suitable antiseptic solution.
- (vi) One (60 ml.) bottle of mercurochrome solution (2%) in water.
- (vii) One (30 ml.) bottle containing sel-volatile having the dose and mode of administration indicated on the label.
- (viii) One pair of scissors.
- (ix) One roll of adhesive plaster (2 cm. x 1 m.).
- (x) Six pieces of sterilised eye pads in separate sealed packets.
- (xi) A bottle containing 100 tablets (each of 325 mg.) of aspirin or any other analgesic.
- (xii) Ointment for burns.
- (xiii) Polythene wash bottle ( $\frac{1}{2}$  litre, i.e. 500 c.c.) for washing eyes.
- (xiv) A snake-bite lancet.
- (xv) One (30 ml.) bottle containing potassium permanganate crystals.
- (xvi) One copy of first-aid leaflet issued by the Directorate General of Factory Advice Service and Labour Institutes, Government of India, Bombay.

(B) For factories in which mechanical power is used and in which the number of persons employed exceeds ten but does not exceed fifty, each first-aid box or cupboard shall contain the following equipment:—

- (i) Twelve small size sterilised dressings.
- (ii) Six medium size sterilised dressings.
- (iii) Six large size sterilised dressings.
- (iv) Six large size sterilised burn dressings.
- (v) Six (15 gm.) packets of sterilised cotton wool.
- (vi) One (120 ml.) bottle of cetrimide solution (1%) or a suitable antiseptic solution.
- (vii) One (120 ml.) bottle of mercurochrome solution (2%) in water.
- (viii) One (60 ml.) bottle containing sal-volatile having the dose and mode of administration indicated on the label.
- (ix) One pair of scissors.
- (x) Two rolls of adhesive plaster (2 cm. x 1 m.).
- (xi) Eight pieces of sterilised eye pads in separate sealed packets.
- (xii) One tourniquet.
- (xiii) One dozen safety pins.
- (xiv) A bottle containing 100 tablets (each of 325 mg.) of aspirin or any other analgesic.
- (xv) Ointment for burns.
- (xvi) One polythene wash bottle ( $\frac{1}{2}$  litre i.e., 500 c.c.) for washing eyes.
- (xvii) A snake-bite lancet.
- (xviii) One (30 ml.) bottle containing potassium permanganate crystals.

- (xix) One copy of the first-aid leaflet issued by the Directorate General of Factory Advice Service and Labour Institutes, Government of India, Bombay.

(C) For factories employing more than fifty persons, each first-aid box or cupboard shall contain the following equipment:—

- (i) Twenty-four small sterilised dressings.
- (ii) Twelve medium size sterilised dressings.
- (iii) Twelve large size sterilised dressings.
- (iv) Twelve large size sterilised burn dressings.
- (v) Twelve (15 gm.) packets of sterilised cotton wool.
- (vi) One (200 ml.) bottle of cetrimide solution (1%) or a suitable antiseptic solution.
- (vii) One (200 ml.) bottle of mercurochrome (2%) solution in water.
- (viii) One (120 ml.) bottle of sal-volatile having the dose and mode of administration indicated on the label.
- (ix) One pair of scissors.
- (x) One roll of adhesive plaster (6 cm x 1 m.).
- (xi) Two rolls of adhesive plaster (2 cm. x 1 m.).
- (xii) Twelve pieces of sterilised eye pads in separate sealed packets.
- (xiii) A bottle containing 100 tablets (each of 325 mg.) of aspirin or any other analgesic.
- (xiv) One polythene wash bottle (500 cc) for washing eyes.
- (xv) Twelve roller bandages 10 cm wide.
- (xvi) Twelve roller bandages 5 cm wide.
- (xvii) Six triangular bandages.
- (xviii) One tourniquet.
- (xix) A supply of suitable splints.
- (xx) Two packets of safety pins.
- (xxi) Kidney tray.
- (xxii) A snake-bite lancet.
- (xxiii) Ointment for burns.
- (xxiv) One (30 ml.) bottle containing potassium permanganate crystals.
- (xxv) One copy of first-aid leaflet issued by the Directorate General of Factory Advice Service and Labour Institutes, Government of India, Bombay.

Provided that items (xiv) to (xxi) inclusive, need not be included in the standard first-aid box or cupboard

(a) where there is a properly equipped ambulance room, or

(b) if at least one box containing such items and placed and maintained in accordance with the requirements of section 45 is separately provided.

(D) In lieu of the dressings required under items (i) and (ii), there may be substituted adhesive wound dressings approved by the Chief Inspector of Factories and other equipment or

medicines that may be considered essential and recommended by the Chief Inspector from time to time.

Rule prescribed under Section 112 read with sub-section (3) of Section 45:

**94. Notice regarding first-aid.**—A notice containing the names of the persons working within the precincts of the factory who are trained in first-aid treatment and who are in charge of the first-aid boxes or cupboards shall be posted in every factory at a conspicuous place and near such box or cupboard. The notice shall also indicate work-room where the said person shall be available. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice.

Rule prescribed under sub-section (4) of Section 45:

**95. Ambulance Room.**—(1) Every ambulance room shall be under the charge of at least one whole-time qualified medical practitioner (hereinafter referred to as "the medical officer") assisted by at least one qualified nurse or dresser-cum-compounder and one nursing attendant in each shift:

Provided that where a factory works in more than one shift, the Chief Inspector, if he is satisfied that on account of the size of the factory, nature of hazards or frequency of accidents, it is not necessary to employ a whole-time medical officer for each shift separately, may, with the previous approval of the Government, grant exemption from the provisions of this sub-rule and permit employment of only one whole-time medical officer for more than one or all shifts, subject to the conditions that—

(a) there shall be no relaxation in respect of nursing staff;

(b) the medical officer is readily available on call during the working hours of the factory.

(2) There shall be displayed in the ambulance room a notice giving the name, address and telephone number of the medical officer in charge. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice.

(3) No medical officer shall be required or permitted to do any work which is inconsistent with or detrimental to his responsibilities under this rule.

(4) The ambulance room shall be separate from the rest of the factory and shall be used only for the purpose of first-aid treatment and rest. It shall have a floor area of at least 24 square metres and smooth, hard and impervious walls and floors, and shall be adequately ventilated and lighted by both natural and artificial means. There shall be attached to it at least one latrine and urinal of sanitary type. An adequate supply of wholesome drinking water shall be in the ambulance room and the room shall contain at least—

- (i) A glazed sink with hot and cold water always available.
- (ii) A table with a smooth top at least 180 cm × 150 cm.
- (iii) Means for sterilising instruments.
- (iv) A couch.

- (v) Two stretchers.
- (vi) Two buckets or containers with close fitting lids.
- (vii) Two rubber hot water bags.
- (viii) A kettle and spirit stove or other suitable means of boiling water.
- (ix) 12 plain wooden splints 900 mm × 100 mm × 6 mm.
- (x) Twelve plain wooden splints 350 mm × 75 mm × 6 mm.
- (xi) Six plain wooden splints 250 mm × 50 mm × 12 mm.
- (xii) Six woollen blankets.
- (xiii) Three pairs artery forceps.
- (xiv) One bottle of spiritous ammoniac aromaticus (120 ml.).
- (xv) Smelling salts (60 gm.).
- (xvi) Two medium size sponges.
- (xvii) Six hand towels.
- (xviii) Four "kidney" trays.
- (xix) Four cakes of toilet, preferably anti-septic soap.
- (xx) Two glass tumblers and two wine glasses.
- (xxi) Two clinical thermometers.
- (xxii) Two teaspoons.
- (xxiii) Two graduated (120 ml.) measuring glasses.
- (xxiv) Two minimum measuring glasses.
- (xxv) One wash bottle (1000 c.c.) for washing eyes.
- (xxvi) One bottle (one litre) carbolic lotion 1 in 20.
- (xxvii) Three chairs.
- (xxviii) One screen.
- (xxix) One electric hand torch.
- (xxx) An adequate supply of anti-tetanus toxoid.
- (xxxi) Four first-aid boxes or cupboard stocked to the standard prescribed under (6) of rule 93.
- (xxxii) Injections—morphine, pethidine, atropine, adrenaline, coramine, novocain (6 each).
- (xxxiii) Coramine liquid (60 ml.).
- (xxxiv) Tablets—antihistaminic, antispasmodic (25 each).
- (xxxv) Syringes with needles—2 cc., 5 cc., 10 cc. and 50 cc.
- (xxxvi) Three surgical scissors.
- (xxxvii) Two needle holders, big and small.
- (xxxviii) Suturing needles and materials.
- (xxxix) Three dissecting forceps.
- (xl) Three dressing forceps.
- (xli) Three scalpels.

- (xlii) One stethoscope.
- (xliii) One sphygmomanometer (Blood Pressure Instrument).
- (xliv) Rubber bandage — pressure bandage.
- (xlv) Oxygen cylinder with necessary attachments.

(4) The occupier of every factory to which these rules apply shall for the purpose of removing serious cases of accident or sickness, provide in the premises and maintain in good condition a suitable conveyance unless he has made arrangements for obtaining such a conveyance from a hospital.

(5) A record of all cases of accident and sickness treated at the room shall be kept and produced to the Inspector or Certifying Surgeon when required.

(6) The Chief Inspector may, by an order in writing, exempt any factory from the requirements of this rule, subject to such conditions as he may specify in that order, if a hospital, ambulance room or dispensary is maintained at or within 200 metres of the precincts of the factory and such arrangements are made as to ensure the immediate treatment of all injuries sustained by workers within the factory and for providing rest to the workers so injured.

*Explanation.* For the purpose of this rule, "Qualified Medical Practitioner" means a person holding a qualification granted by an authority specified in the Schedule to the Indian Medical Degrees Act, 1916, or in the Schedules to the Indian Medical Council Act, 1956.

#### Rules prescribed under Section 46:

96. **Canteens.** — (1) The occupier of every factory wherein more than 250 workers are ordinarily employed and which is specified by the Government by a notification in the Official Gazette in this behalf shall provide, in or near the factory, an adequate canteen according to the standards prescribed in the Rules.

(2) The canteen building shall be situated at a distance of not less than 15 metres from any latrine, urinal, boiler house, coal stacks, ash dumps and any other source of dust, smoke or obnoxious fumes:

Provided that the Chief Inspector may in any particular factory relax the provisions of this sub-rule to such an extent as may be reasonable in the circumstances and may require adequate measures to be adopted to secure the essential purpose of this sub-rule.

(3) The canteen building shall be constructed in accordance with the plans approved by the Chief Inspector and shall accommodate at least a dining hall, kitchen, store room, pantry and washing places separately for workers and for utensils.

(4) In a canteen the floor and inside walls upto a height of 1.2 metres from the floor shall be made of smooth and impervious material; the remaining portion of the inside walls shall be made smooth by cement plaster or in any other manner approved by the Chief Inspector.

(5) The doors and windows of a canteen building shall be of flyproof construction and shall allow adequate ventilation.

(6) The canteen shall be sufficiently lighted at all times when any persons have access to it.

(7) (a) In every canteen —

(i) all inside walls of rooms and all ceilings and passages and staircases shall be limewashed or colourwashed at least once in each year or painted once in three years dating from the period when last limewashed, colourwashed or painted, as the case may be;

(ii) all wood work shall be varnished or painted once in three years dating from the period when last varnished or painted;

(iii) all internal structural iron or steel work shall be varnished or painted once in three years dating from the period when last varnished or painted:

Provided that inside walls of the kitchen shall be limewashed once every four months.

(b) Records of dates on which limewashing, colourwashing, varnishing or painting is carried out shall be maintained in the prescribed register (Form 8).

(8) The precincts of the canteen shall be maintained in a clean and sanitary condition. Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance. Suitable arrangements shall be made for the collection and disposal of garbage.

97. **Dining hall.** — (1) The dining hall shall accommodate at a time at least 30 per cent of the workers working at a time.

Provided that, in any particular factory or in any particular class of factories, the Chief Inspector may, by an order in writing in this behalf, alter the percentage of workers to be so accommodated.

(2) The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs, shall be not less than 1 square metre per diner to be accommodated as prescribed in sub-rule (1).

(3) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number. Washing places for women shall be separate and screened to secure privacy.

(4) Sufficient tables, chairs or benches shall be available for the number of diners to be accommodated as prescribed in sub-rule (1).

98. **Equipment.** — (1) There shall be provided and maintained sufficient utensils, crockery, cutlery, furniture and any other equipment necessary for the efficient running of the canteen. Suitable clean clothes for the employees serving the canteen shall also be provided and maintained.

(2) The furniture, utensils and other equipment shall be maintained in a clean and hygienic condition. A service counter, if provided, shall have a top of smooth and impervious material. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

**99. Prices to be charged.** — (1) The Chief Inspector may, by an order in writing, direct the manager to provide in the canteen any item of foodstuff if he is satisfied that such item is in general demand. Such order shall specify the size of each portion to be served, the number of portions which shall be available and the frequency of serving the particular item per week. Such order shall also specify the time limit within which the order shall be complied with.

(2) Food, drink and other items served in the canteen shall be sold on a non-profit basis and the prices charged shall be subject to the approval of the Canteen Managing Committee;

(3) In computing the prices referred to in sub-rule (1) the following items of expenditure shall not be taken into consideration, but will be borne by the occupier: —

(a) the rent for the land and building;

(b) the depreciation and maintenance charges of the building and equipment provided for the canteen;

(c) the cost of purchase, repairs and replacement of equipment including furniture, crockery, cutlery and utensils;

(d) the water charges and expenses for providing lighting and ventilation;

(e) the interest on the amount spent on the provision and maintenance of the building, furniture and equipment provided for the canteen;

(f) the cost of fuel required for cooking or heating foodstuffs or water; and

(g) the wages of the employees serving in the canteen and the cost of uniforms, if any, provided to them;

Provided that where a canteen is managed by workers' co-operative society, the prices to be charged may include a margin of profit upto a maximum of 5 per cent of its working capital.

(4) The charges per portion of foodstuffs, beverages and any other items served in the canteen shall be conspicuously displayed in the canteen.

**100. Accounts.** — (1) All books of accounts, registers and any other documents used in connection with the running of the canteen shall be produced on demand to an Inspector.

(2) The accounts pertaining to the canteen shall be audited, once in every twelve months, by registered accountants and auditors. The balance sheet prepared by the said auditors shall be submitted to the Canteen Managing Committee not later than two months after the closing of the audited accounts:

Provided that the accounts pertaining to the canteen in a Government factory having its own accounts department, may be audited in such department:

Provided further that where the canteen is managed by a co-operative society registered under the Co-operative Societies Act, the accounts pertaining to such canteen may be audited in accordance

with the provisions of the Co-operative Societies Act.

**101. Managing Committee.** — (1) The manager shall appoint a Canteen Managing Committee which shall be consulted from time to time as to —

(a) the quality and quantity of food stuffs to be served in the canteen;

(b) the arrangement of the menus;

(c) the time of serving meals in the canteen; and

(d) any other matter pertaining to the canteen as may be directed by the Committee:

Provided that where the canteen is managed by a Co-operative Society registered under the Co-operative Societies Act, it shall not be necessary to appoint a Canteen Managing Committee.

(2) The Canteen Managing Committee shall consist of an equal number of persons nominated by the occupier and those elected by the workers. The number of elected workers shall be in the proportion of 1 for every 1000 workers employed in the factory, provided that in no case shall there be more than 5 or less than 2 workers on the Committee.

(3) The manager shall determine and supervise the procedure for elections to the Canteen Managing Committee.

(4) Canteen Managing Committee shall be re-constituted every two years and the previous Managing Committee shall hold office till such time as the new Committee takes charge.

**102. Annual medical examination.** — (1) Annual medical examination for fitness of each member of the canteen staff who handles foodstuffs shall be carried out by the factory medical officer or the Certifying Surgeon, which shall include the following: —

(a) routine blood examination;

(b) routine and bacteriological testing of faeces and urine for germs of dysentery and typhoid fever; and

(c) any other examination including chest X-ray that may be considered necessary by the factory medical officer or the Certifying Surgeon.

(2) Any person who in the opinion of the factory medical officer or the Certifying Surgeon is unsuitable for employment on account of possible risk to the health of others, shall not be employed as canteen staff.

Rule prescribed under Section 47:

**103. Shelters, rest rooms and lunch rooms.** — The shelters or rest rooms and lunch rooms shall conform to the following standards: —

(a) the building shall be soundly constructed and all the walls and roof shall be of suitable heat resisting materials and shall be water-proof. The floor and walls to a height of 90 centimetres shall be so laid or finished as to provide a smooth, hard and impervious surface;

(b) the height of every room in the building shall be not less than 3.75 metres from floor level to the lowest part of the roof and there shall be at least 1.12 square metres of floor area for every person employed:

Provided that —

(i) workers who habitually go home for their meals during the rest periods may be excluded in calculating the number of workers to be accommodated, and

(ii) in the case of factories in existence at the date of commencement of the Act, where it is impracticable owing to lack of space to provide 1.12 square metres of floor area for each person, such reduced floor area per person shall be provided as may be approved in writing by the Chief Inspector:

Provided further that, in the case of rooms in buildings in existence at the date of the coming into force of this rule which have been or are intended to be adopted for use as shelters or rest-rooms or lunch-rooms, as the case may be, the Chief Inspector may approve the rooms having such reduced height as may in his opinion be reasonable in the circumstances of the case on such conditions as may be deemed expedient.

(c) Effective and suitable provision shall be made in every room for securing and maintaining adequate ventilation by the circulation of fresh air and there shall also be provided and maintained sufficient and suitable natural or artificial lighting;

(d) every room shall be adequately furnished with chairs or benches with back-rest;

(e) sweepers shall be employed whose primary duty shall be to keep the rooms, buildings and precincts thereof in a clean and tidy condition;

(f) suitable provision shall be made in every room for supply of drinking water and facilities for washing; and

(g) the lunch room shall be provided with adequate number of tables with impervious tops for the use of workers for taking food.

Rules prescribed under sub-section (3) of Section 48:

104. **Creches.** — (1) The creche shall be conveniently accessible to the mothers of the children accommodated therein and so far as is reasonably practicable it shall not be situated in close proximity to any part of the factory where obnoxious fumes, dust or odours are given off or in which excessively noisy processes are carried on.

(2) The buildings in which the creche is situated shall be soundly constructed and all the walls and roof shall be of suitable heat resisting materials and shall be waterproof. The floor and internal walls of the creche shall be so laid or finished as to provide a smooth impervious surface.

(3) The height of the rooms in the building shall be not less than 3.75 metres from the floor to the lowest part of the roof and there shall be not less than 2 square metres of floor area for each child to be accommodated:

Provided that in the case of rooms in buildings in existence at the date of the coming into force of these Rules and which have been or are intended to be adapted for use as a creche, the Chief Inspector may approve the rooms having such reduced height as may in his opinion be reasonable in the circumstances of the case on such conditions as may be deemed expedient.

(4) Effective and suitable provision shall be made in every part of the creche for securing and maintaining adequate ventilation by the circulation of fresh air.

(5) The creche shall be adequately furnished and equipped and in particular there shall be one suitable cot or cradle with the necessary bedding for each child:

Provided that for children over two years of age it will be sufficient if suitable bedding is made available and at least one chair or equivalent seating accommodation for the use of each mother while she is feeding or attending to her child, and a sufficient supply of suitable toys for the older children.

(6) A suitably fenced and shady open air playground shall be provided for the older children:

Provided that the Chief Inspector may by order in writing exempt any factory from compliance with this sub-rule if he is satisfied that there is no sufficient space available for the provision of such a playground.

105. **Washroom.** — (1) There shall be in or adjoining the creche a suitable washroom for the washing of the children and their clothing. The washroom shall conform to the following standards: —

(a) the floor and internal walls of the room to a height of 90 centimetres shall be so laid or furnished as to provide a smooth impervious surface. The room shall be adequately lighted and ventilated and the floor shall be effectively drained and maintained in a clean and tidy condition;

(b) there shall be at least one basin or similar vessel for every four children accommodated in the creche at any one time together with a supply of water provided, if practicable, through taps from a source approved by the Health Officer. Such source shall be capable of yielding for each child a supply of at least 23 litres of water a day; and

(c) an adequate supply of clean clothes, soap and clean towels shall be made available for each child while it is in the creche.

(2) Adjoining the washroom referred to in sub-rule (1), a latrine shall be provided for the sole use of the children in the creche. The design of latrine and the scale of accommodation to be provided shall either be approved by the Public Health authorities or, where there is no such Public Health authority, by the Chief Inspector of Factories.

106. **Supply of milk and refreshment.** — At least 300 ml. of clean pure milk shall be provided for each child every day it is accommodated in the creche and the mother of such a child shall be



allowed in the course of her daily work two intervals of at least fifteen minutes each other than those allowed under section 55 to feed the child. For children above two years of age there shall be provided in addition an adequate supply of wholesome refreshment.

**107. Creche staff.**—For each creche there shall be appointed a woman in-charge and an adequate number of female attendants to help the woman in-charge. The creche staff shall be provided with suitable clean clothes for use while on duty.

**108. Qualifications of woman in-charge.**—(1) Except as provided in sub-rule (2), no woman shall be appointed under rule 104 as a woman in-charge of a creche unless she possesses the qualifications prescribed for a midwife under any law in force or produces a certificate that she has undergone training for a period of not less than 18 months in a hospital, maternity home or nursing home approved in this behalf by the Chief Inspector, or produces a certificate that she has received training for a pre-primary teacher in an institution approved by the Government.

(2) The provisions of sub-rule (1) shall not apply in the case of a woman who is in-charge of a creche in a factory immediately before the coming into force of these rules, and any rules regarding qualifications of such woman-in-charge of a creche prevailing prior to the coming into force of these rules shall apply to her.

Rule prescribed under section 50 read with Section 48:

**109. Exemption from the provision of creche.**—(1) In factories where the number of married women or widows employed does not exceed 15 or where the factory works for less than 180 days in a calendar year, or where number of children kept in the creche was less than 5 in the preceding year, the Chief Inspector may exempt such factories from the provisions of section 48 and the rules 104 to 108 made thereunder, if he is satisfied that alternate arrangements as stipulated under sub-rule (2) are provided by the factory.

(2)(a) The alternate arrangements required in sub-rule (1) shall include a creche building which has a minimum accommodation at the rate of 1.86 square metres per child and constructed in accordance with the plans approved by the Chief Inspector.

(b) The creche building shall have—

(i) a suitable washroom for washing of the children and their clothing;

(ii) adequate supply of soap and clean clothes and towels; and

(iii) adequate number of female attendants who are provided with suitable clean clothes for use while on duty to look after the children in the creche.

(3) The exemption granted under sub-rule (1) may at any time be withdrawn by the Chief Inspector if he finds after such enquiry as he may deem fit, that the factory has committed a breach of the provision of this rule.

Rule prescribed under sub-section (2) of Section 49 and Section 50:

**110. Welfare Officers.**—(1) Number of Welfare Officers—

(a) The occupier of every factory employing between 500 and 2000 workers shall appoint at least one Welfare Officer, and where the number of workers exceeds 2000, there shall be an additional Welfare Officer for every additional 2000 workers or fraction thereof over 500. In a factory where both men and women workers are employed, the number of women Welfare Officers to be appointed shall be in proportion to the women workers employed provided that where the number of women employed is more than 100 and the total number of workers does not exceed 2500 an additional women Welfare Officer shall be appointed.

(b) Where there are more than one Welfare Officer appointed, one of them shall be called the Chief Welfare Officer and the others Assistant Welfare Officers.

(2) *Qualifications.*—A person shall not be eligible for appointment as a Welfare Officer unless he—

(a) possesses a degree of a University recognised by the Government in this behalf;

(b) has obtained a degree or diploma in social science from any institution recognised by the Government in this behalf; and

(c) has adequate knowledge of the language spoken by the majority of the workers in the factory to which he is to be attached:

Provided that the Government may, by notification in the Official Gazette, grant exemption from the provisions of clause (b) in suitable cases till such time better facilities in the matter of training in social science are available.

Provided further that, in the case of a person who is acting as a Welfare Officer at the commencement of these rules, the Government, may, subject to such conditions as it may specify, relax all or any of the aforesaid qualifications.

(3) *Recruitment of Welfare Officers*—

(a) The post of a Welfare Officer shall be advertised in at least two newspapers having a wide circulation in the State, one of which shall be an English newspaper;

(b) The selection shall be made from among the candidates applying for the post by a committee appointed by the occupier of the factory;

(c) The appointment when made shall be notified by the occupier to the Government or such authority as the Government may specify for this purpose, giving full details of the qualifications, etc. of the officer appointed and the conditions of his service.

(4) *Conditions of service of Welfare Officers*—

(a) A Welfare Officer shall be given appropriate status corresponding to the status of the other executive heads of the factory and he shall be started on a suitable scale of pay.

(b) The conditions of service of a Welfare Officer shall be the same as of other members of the staff of corresponding status in the factory:

Provided that, in the case of discharge or dismissal, the Welfare Officer shall have a right of appeal to the Government whose decision thereon shall be final and binding upon the occupier.

**(5) Duties of Welfare Officers —**

The duties of the Welfare Officer shall be: —

(a) to establish contacts and hold consultations with a view to maintaining harmonious relations between the factory management and workers;

(b) to bring to the notice of the factory management the grievances of workers, individual as well as collective, with a view to securing their expeditious redress and to act as a liaison officer between the management and labour;

(c) to study and understand the point of view of labour in order to help the factory management to shape and formulate labour policies and to interpret these policies to the workers in a language they can understand;

(d) to maintain good industrial relations by using his influence in the event of a dispute between the factory management and workers and bringing about a settlement by persuasive effort;

(e) to advise on fulfilment by the management and the concerned departments of the factory of obligations, statutory or otherwise, concerning regulation of working hours, maternity benefit, medical care, compensation for injuries and sickness and other welfare and social benefit measures;

(f) to advise and assist the management in the fulfilment of its obligations, statutory or otherwise, concerning prevention of personal injuries and maintaining a safe work environment, in such factories where a Safety Officer is not required to be appointed under the enabling provisions under Section 40 B;

(g) to promote relations between the concerned departments of the factory and workers which will bring about productive efficiency as well as amelioration in the working conditions and to help workers to adjust and adapt themselves to their working environments;

(h) to encourage the formation of Works and Joint Production Committees, Co-operative Societies and Welfare Committees, and to supervise their work;

(i) to encourage provision of amenities such as canteens, shelters for rest, creches, adequate latrine facilities, drinking water, sickness and benevolent scheme payments, pension and superannuation funds, gratuity payments, granting of loans and legal advice to workers;

(j) to help the factory management in regulating the grant of leave with wages and explain to the workers the provisions relating to leave with wages and other leave privileges and to

guide the workers in the matter of submission of application for grant of leave for regulating authorised absence;

(k) to advise on provision of welfare facilities, such as housing facilities, foodstuffs, social and recreational facilities, sanitation, advice on individual personnel problems and education of children;

(l) to advise the factory management on questions relating to training of new starters, apprentices, workers on transfer and promotion, instructors and supervisors, supervision and control of notice board and information bulletins to provide further education to workers and to encourage their attendance at technical institutes; and

(m) to suggest measures which will serve to raise the standard of living of workers and in general promote their well-being.

*(6) Welfare officers not to deal with disciplinary cases or appear on behalf of the management against workers —*

No Welfare Officer shall deal with any disciplinary cases against workers or appear before a conciliation officer in a court or tribunal on behalf of the factory management against a worker or workers.

**(7) Powers of exemption —**

The Government may, by notification in the Official Gazette, exempt any factory or class or description of factories from the operation of all or any of the provisions of these rules subject to compliance with such alternative arrangements as may be approved.

## CHAPTER VI

### WORKING HOURS OF ADULTS

Rule prescribed under sub-section (2) of section 53.

**111. Compensatory holidays.** — (1) Except in the case of workers engaged in any work which for technical reason must be carried on continuously throughout the day, the compensatory holidays to be allowed under sub-section (1) of section 53 of the Act shall be so spaced that not more than two holidays are given in one week.

(2) The manager of the factory shall display, on or before the end of the month in which holidays are lost, a notice in respect of workers allowed compensatory holidays during the following month and of the dates thereof, at the place at which the notice of periods of work prescribed under section 61 is displayed. Any subsequent change in the notice in respect of any compensatory holiday shall be made not less than three days in advance of the date of that holiday.

(3) Any compensatory holiday or holidays to which a worker is entitled shall be given to him before he is discharged or dismissed and shall not be reckoned as part of any period of notice required to be given before discharge or dismissal.

(4) (a) The manager shall maintain a register in form 16:

Provided that, if the Chief Inspector of Factories is of the opinion that any muster roll or register maintained as part of the routine of the factory or return made by the manager, gives in respect of any or all of the workers in the factory the particulars required for the enforcement of section 53, he may, by order in writing, direct that such muster roll or register or return shall, to the corresponding extent, be maintained in place of and be treated as the register or return required under this rule for that factory.

(b) The register maintained under clause (a) shall be preserved for a period of three years after the last entry in it and shall be produced before the Inspector on demand.

**112. Factories exempted under Section 58.**—(1) The Printing Presses attached to the newspaper offices shall be exempted from the provisions of sub-section (1) of section 58, subject to the following conditions, namely:—

In such printing press—

(i) the workers of each relay shall bear a badge of distinct colour which will identify the worker of one relay from that of the other;

(ii) the colour of the badge to be worn by the workers of each relay shall be specified in the notice of periods of work required to be displayed and correctly maintained under sub-section (1) of Section 61 and in the copies of the notice to be sent to the Inspector under sub-sections (9) and (10) of the said section;

(iii) a flag or light having the same colour as that of the badge to be worn by the workers of any relay actually at work shall be displayed during the time of actual working of one or more relays in the department concerned;

(iv) each worker engaged in the work carried on by means of over-happing shifts shall be in possession of an identity card. The identity card shall be supplied to the worker by the factory management free of cost and shall bear the photograph of the worker, his full name, signature or thumb impression and visible identification mark and the signature of the manager.

Muster Roll prescribed under sub-section (4) of Section 59:

**113. Muster roll for exempted factories.**—The manager of every factory—

(a) which is exempted under Section 5, or

(b) in which workers are exempted under section 64 or section 65, from the provisions of section 51 or sections 54, shall keep a muster roll in Form No. 17 showing the normal piece work rate of pay or the rate of pay per hour of all the exempted workers in the factory.

In this muster roll it shall be correctly entered the extent of overtime worked by each worker together with the overtime earnings in respect thereof and the dates of the payment of such earning. The muster roll in Form No. 17 shall always be available, and produced for inspection whenever required by an Inspector.

**114. Overtime slips.**—Any work done by a worker beyond the normal specified period of work shall be entered in the overtime slips in duplicate indicating therein the actual period of overtime worked by him. A copy of such overtime slip duly signed by the manager or by a person duly authorised by him in that behalf, shall be given to the worker immediately after completion of the overtime work:

Provided that if the Chief Inspector of Factories is satisfied that in view of the nature of work carried out in the factory, it is not possible to issue daily slips to the workers, he may permit issue of weekly slips.

Rule prescribed under Section 60:

**115. Double employment of workers.**—(a) The Inspector may sanction the employment of adult workers in more than one factory on the same day if he is satisfied that such adult worker is allowed to work not more than forty eight hours in a week and is allowed weekly holidays as per section 52.

(b) A note under the initials of the Inspector shall be made in the remarks column of a Register of such workers permitted to work in more than one factory.

Notice prescribed under sub-section (8) of Section 61:

**116. Notice of period of work for adults.**—The notice of periods of work for adult workers shall be in Form 18.

Register prescribed under sub-section (2) of Section 62:

**117. Register of adult workers.**—The register of adult workers shall be in Form 19.

Rules prescribed under Section 64:

**118. Persons defined to hold positions of supervision or management or confidential position.**—The following persons shall be deemed to hold positions of supervision or management or to be employed in a confidential position in the factory:—

(a) All persons specified in the Schedule annexed hereto.

(b) Any other person who, in the opinion of the Chief Inspector holds a position of supervision or management or is employed in a confidential position.

## SCHEDULE

### List of persons defined to hold positions of Supervisions of Management in Factories

#### I. All Factories

Manager.  
Assistant Manager  
Labour Officer  
Welfare Officer  
Department Heads and Assistants  
Engineer and certified Assistants  
Electrical Engineer  
Head Storekeeper and Assistants  
Boiler Serang or such Boiler Attendants who are in charge of battery of boilers and are only required to do supervisory work  
Technical Experts

II. Engineering Workshops

Provided that —

(a) no female adult workers shall be required or allowed to work for more than nine hours in any day.

(b) except in the case of urgent repairs —

(1) No male adult workers shall be required or allowed to work for more than ten hours in any day;

(2) No male adult worker shall be required or allowed to work in any quarter for more than fifty hours overtime on weekly limits

(3) Period of work for each male adult worker shall be so arranged that inclusive of his interval for rest, they shall not spread over more than twelve hours in any day:

Provided further that the restrictions imposed by sub-clauses (1) and (3) shall not apply in the case of a shift worker mentioned in entries nos. 8, 10, 11, 14 to 35(i), 36(i), 44 and 51 of the Schedule who is allowed to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty.

SCHEDULE

Sr. No.	Section of the Act empowering grant of exemption	Class of factory	Nature of exempted work	Extent of exemption	Conditions
1	2	3	4	5	6
1.	64(2) (a) and 64(3)	All factories	—	Sections 51, 52, 54, 55, 56 and 61	<p>Unless the Inspector gives permission in writing for reporting otherwise than as herein laid down, the employment of persons on urgent repairs the manager —</p> <p>(i) shall send within twenty-four hours of the commencement of work on urgent repairs a written notice to the Inspector describing briefly the nature of the urgent repairs and the probable period of their duration, and</p> <p>(ii) shall send weekly during the continuance of the work on urgent repairs a statement giving the names of all persons who have worked for more than nine hours in any one day or for more than forty-eight hours of the preceding week in a factory. Such statement shall also show total number of hours worked each day of the week.</p> <p>(b) If the Inspector is of opinion that any work being carried on or likely to be carried on in a factory as "urgent repairs" is not "urgent repairs", the Inspector shall serve on the manager an order to that effect, and the manager shall in respect of such work not allow any worker to work in contravention of the provisions of sections 51, 52, 54, 55, 56 and shall comply with the provisions contained in section 61.</p>

1	2	3	4	5	6
2.	64(2)(b) 64(2)(h) and 64(3)	All factories other than those on continuous processes	Work performed by— (i) All workers attending to engines and boilers (ii) Workers attending to starting, stopping and maintaining electric motors and connected switch-gear (iii) Departmental oilers	Sections 51, 52, 54, 55, 56 and 61	(c) Intervals for food and rest shall be given to all workers allowed to work on such work. (a) Such workers shall be allowed not less than two holidays in each period covered by four consecutive statutory factory holidays and shall not be allowed to work for more than six hours on any of the other two weekly holidays; (b) The notice required by Sec- tion 52, shall be delivered to the office of the Inspector showing on which days holi- days will be allowed; (c) Intervals for food and rest shall be given to all workers allowed to work on such work; (d) No worker shall be allowed to work for more than fifty four hours in any one week and (e) Register or muster roll re- quired to be maintained under Section 62 shall show correc- tly full particulars of periods within which each such wor- ker may be required to work; entries in the register or muster roll shall be up to date.
3.	64(2)(e) and 64(3)	All factories	Work performed by drivers on lighting, ventilating and humidifying appara- tus	Sections 51, 54, 55, 56 and 61	(a) Intervals for food and rest shall be given to all such wor- kers. (b) Register or muster roll requi- red to be maintained under Section 62 shall show correc- tly full particulars of pe- riods within which each such worker may be required to work; the entries in the re- gister or muster-roll shall be up-to-date.
4.	64(2)(e) and 64(3)	(i) All factories  (ii) Cotton spinning and weaving mill	Work performed by— (i) Fire pumpmen (ii) All personnel in the fire- fighting staff  Work involved in cleaning blow room flues	Sections 51, 54, 55, 56 and 61  Sections 51, 54 and 56	(a) Register or muster-roll re- quired to be maintained under Section 62 shall show correc- tly full particulars of pe- riods within which each such worker may be required to work; the entries in the re- gister or muster-roll shall be up-to-date. (b) Intervals for food and rest shall be given to workers allowed to work on such work. (a) No worker shall be allowed to work for more than fifty- one hours in any one week. (b) No worker shall be allowed to work in such a manner that the spreadover exceeds two and a half hours except on one day in a week previously notified to the Inspector when it shall not exceed twelve hours.
5.	64(2)(b)	Dyeing and bleaching factories or depart- ments	Work performed by klermen	Sections 51, 54, 55 and 56	The intervals for food and rest totalling one hour if working hours exceed eight and a half in a day or half an hour if working hours do not exceed eight and a half hours shall be given to worker every day and the re- gister or muster roll maintained in accordance with Section 62 shall show correctly the pe- riods of work of each worker.
6.	64(2)(b)	Cloth printing factories or department of factories carrying on printing, sanforizing, finishing and merceri- sing of cloth	Work in the nature of pre- paratory or complemen- tary to main operations	Sections 51, 54 and 56	

1	2	3	4	5	6
7.	64(2)(d)	Cloth printing factories or departments of factories and bleaching, finishing, mercerising, raising, dyeing, singeing and sanforizing departments of factories.	All work	Sections 55	(a) Workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.
8.	64(2)(b)	All factories other than cotton spinning and weaving mills.	(a) Work performed by oilers, and (b) Work in mechanic shops smithies or foundries so far as such work is complementary to the main operations	Sections 51, 54 and 56	This exemption shall not apply — (i) in the case of work performed by oilers, where these workers or the factories in which the work have been exempted from the provisions of Sections 52 or 55; and (ii) to the work in the mechanic shops, smithy or foundry portion of engineering workshops or to a smithy or foundry used solely as such.
9.	64(2)(d) 64(3) and 64(4)	Oil tank installations	Work performed by worker in connection with pumping operations	Sections 51, 52, 54, 55, 56 and 61	(a) Intervals for food and rest shall be given to all workers allowed to work on such work. (b) A compensatory rest period of at least twenty-four consecutive hours shall be given to each worker after the cessation of the pumping operations continuing after 10:00 p. m. (c) Notice of such pumping operations with the number of workers allowed to work shall be sent to the Inspector as soon as possible after commencement of such work. (d) Exemption from Section 61 shall be availed of only during the continuance of pumping operations.
10.	64(2)(d) and (4)	Public electricity supply factories generating electricity in any manner and those engine rooms and boiler departments generating electricity in any manner for their own use employing workers on shifts of not more than eight hours each	Operation and maintenance of — (i) Prime movers and auxiliaries, generators, transformers and switch-gear (ii) Boilers and auxiliaries	Sections 51, 52, 54, 55 and 56.	(a) The workers shall be allowed to work on shifts of not longer than eight hours duration. (b) In the absence of a worker who has failed to report for duty on a shift, the worker may be allowed to work the whole or part of a subsequent shift provided that the next shift of the shift worker shall not commence before a period of 16 hours has elapsed after the (specified) stopping time of the shift to which the worker belongs. (c) No worker shall be allowed to work for more than fifty-six hours in any one week except that when employed as in condition (b) above he shall not be allowed to work for more than sixty-four hours in any one week. (d) Such workers shall be allowed not less than two holidays in each period covered by four consecutive statutory factory holidays. (e) Intervals for food and rest shall be given to all workers allowed to work on such work.
11.	64(2)(d)	Oil tank installations	Work performed by furnacemen and firemen —	Sections 51, 54 and 56	...



1	2	3	4	5	6
12.	64(2)(d) and 64(4)	Factories refining crude mineral oil	(a) All continuous process work performed by plant operators, fire-operators, telephone operators, laboratory testers and analysts, maintenance and instruments personnel connected with continuous process work, dressers and sample carriers (b) Work performed by workers engaged in discharging and loading tankers	Sections 51, 52, 54, 55 and 56 Sections 51, 52, 54, 55 and 61	As in exemption No. 10. (i) Interval for food and rest shall be given to all workers allowed to work in such work. (ii) Exemption from section 61 shall be availed of only during the continuance of the operations, and (iii) Notice of pumping operations with the number of workers allowed to work shall be sent to the Inspector as soon as possible after the commencement of such work.
	64(2)(d) and (4)	...	(c) Work performed by Safety Operators	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.
13.	64(2)(d) and 4	Electrical receiving stations and sub-stations or in any factory the department of the factory receiving and distributing electrical energy for the use of the factory	Operation and maintenance of transformers and their auxiliaries including receiving and distribution, switch gear, lighting arrestors, synchronous and other condensers and rotary and static condensers	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.
14.	64(2)(d) and 64(4)	Factories or departments of factories charging electrical accumulators	Operations in connection with charging electrical accumulators	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.
15.	— do —	Distilleries	Work on the extraction of sugar from various bases, fermentation of sugar juice and distillation of fermented wash	Sections 51, 52, 54, 55 and 56	— do —
16.	— do —	Sugar factories	Operations beginning with receiving and weighing of cane and ending with bagging of sugar	Sections 51, 52, 54, 55 and 56	— do —
17.	64(2)(d) and 64(4)	Chemical factories	All continuous process work	— do —	— do —
18.	64(2)(3) and 64(4)	Vegetable oil hydrogenation factories.	The work, viz. refining bleaching, filtering, generation of hydrogen, hydrogenating and deodorising processes also compression of oxygen and the cylinder filling	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.
19.	— do —	Magnesium Chloride factories.	The work on concentrating process	— do —	— do —
20.	64(2)(d) and 64(4)	Public pumping and compressor stations	All work	— do —	— do —
21.	— do —	Water supply pumping factories of railway workshops	— do —	— do —	— do —
22.	— do —	Ice factories	Work of the engine and compressor drivers and assistants and oilers	— do —	— do —
23.	— do —	Carbonic acid gas works	Work of firemen, pumpmen plant drivers, oilers and the filling of cylinders	— do —	— do —
24.	64(2)(b)	Carbonic acid gas works	Work of firemen to light lyebollers	Sections 51, 54 and 55	(a) This exemption shall be availed of only one day when plant is restarted after closure. (d) Intervals for food and rest shall be given to all workers allowed to work on such work.

1	2	3	4	5	6
25.	64(2)(b)	Carbonic acid gas solidification works	All work except packing blocks	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.
26.	64(2)(d) 64(4)	And oxygen factories	Engine and plant drivers, oilers and the filling of cylinders	— do —	— do —
27.	— do —	Hydraulic pumping stations	All work	— do —	— do —
28.	— do —	Paper, cardboard and strawboard factories working on three eight hour shift system	Work performed by male adult worker on choppers, digesters, kneaders, strainers, and washers, beaters, paper making machines, pumping plants, reelers and cutters	— do —	— do —
29.	— do —	Cement factories and asbestos cement factories	All work on continuous process units.	— do —	— do —
30.	— do —	Glycerine factories	All continuous process work	— do —	— do —
31.	— do —	Dextrine manufacturing factories	— do —	— do —	— do —
32.	— do —	Acetylene factories	Generation of gas and filling of cylinders	— do —	— do —
33.	— do —	Starch factories working on 8 hour shifts	All work except the engineering department and workshops	— do —	— do —
34.	— do —	Potassium chlorate factories	Work in the cell-room	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.
35.	64(2)(d) and 64(4)	(i) Ferrous and non-ferrous metal factories	All work on furnace	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.
	64(2)(d)	(ii) — do —	Hot rolling	Section 55	Workers shall be on shifts not longer than eight hours' duration.
36.	64(2)(d) 64(4)	(i) Sodium and potassium bichromate factories	Work on furnace and crystallisers	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.
	64(2)(d)	(ii) Sodium and potassium bichromate factories	All other work	Section 55	Workers shall be allowed to work on the shifts of no longer than eight hours' duration.
37.	— do —	Oil mills	All continuous work	— do —	— do —
38.	— do —	Flour mills	All work	— do —	— do —
39.	64(2)(b)	(i) Gur factories	The work performed by workers in crushing sugar-canes	Sections 51, 55 and 56	—
	64(2)(c) 64(3)	(ii) Gur factories	All other work except crushing sugarcane	Sections 51, 54, 55, 56 and 61	A notice showing the periods of work of the crusher shall be exhibited in the factory and a copy sent to the Inspector.
40.	64(2)(d)	Cement tile Factories	Work on the "curing tiles"	Sections 51 and 52	(a) No worker shall be allowed to work for more than four hours on any day of the weekly holidays. (b) No worker shall be allowed to work in consecutive weekly holidays. (c) No worker shall be allowed to work in excess of limits of weekly hours of work as laid down in section 51, except during the week when the worker works on a weekly holiday as in (a) above and when his total hours of work may be allowed to exceed the weekly limit laid down in section 51 by the number of hours not exceeding 4 worked on the weekly holiday.
41.	64(2)(d) and 64(4)	Glass factories	All work except packing work and work in engineering department	Sections 51, 52, 54, 55 and 56	As in exemption No. 10.

1	2	3	4	5	6
42.	64(2)(d) Smelting and refining factories	(i) Work on the reducing furnace (ii) All continuous process work in Electrolytic Refining Factories	Sections 55	(a) The workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.	
43.	64(2)(b) Film Studio	All work	Sections 51, 54 and 56		
44.	64(2)(d) Rubber tyre factories and 64(4)	All work on curing process	Sections 51, 54, 55 and 56	(a) The workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) In the absence of a worker who has failed to report for duty, the shift worker may be allowed to work the whole or part of a subsequent shift provided that the next shift of the shift worker shall not commence before a period of 16 hours has elapsed after the (specified) stopping time of the shift to which the worker belongs. (c) Intervals for food and rest shall be given to all workers allowed to work on such work.	
45.	64(2)(d) Ordinance factories	Work in melting shop, swerfannell in furnace gas producers, electrical sub-stations and water and electrical distribution departments.	Section 55	(a) Workers shall ordinarily work on three 8 hours' shifts. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.	
46.	64(2)(d) Soap factories and 64(4)	(i) Work in soap boiling pans, soap drying pans. (ii) All continuous process work in continuous soap making plants (iii) All continuous process work in synthetic detergent plants including cartoning and packing carried out in a continuous chain	Section 55 Sections 51, 52, 54, 55 and 56 Sections 51, 52, 54, 55 and 56	Workers shall be allowed to work on shifts of not longer than 8 hours' duration. As in exemption No. 10. — do —	
47.	64(2)(d) Pottery works	(i) Work of firemen on kilns (ii) Work tunnel on kilns	Section 55 Section 52 and 55	(a) Workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) No worker shall be allowed to work on consecutive weekly holidays. (c) Intervals for food and rest shall be given to all workers allowed to work on such work.	
48.	64(2)(d) Brick factories	Work of firemen on kilns	Section 55	(a) Workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.	
49.	64(2)(d) Plastic factories	Work on plastic injection machine and plastic extruding machines	Section 55	Workers shall be allowed to work on shifts of not longer than eight hours' duration.	
50.	64(2)(d) Pharmaceutical factories	All continuous process work	— do —	Workers shall be allowed to work on shifts of not longer than 8½ hours' duration and on the condition that — (i) they shall be granted intervals for food and rest of at least half an hour. (ii) notice of period of work shall not show more than 42½ hours' work inclusive of unspecified rest intervals.	

1	2	3	4	5	6
51.	64(2)(c)	All factories	Telephone Operators	Section 55	The intervals for food and rest totalling one hour if working hours exceed eight and a half in a day of half an hour if working hours do not exceed eight and a half hour shall be given to each worker every day and the same noted in the register of muster roll maintained in accordance with section 62.
52.	64(2)(i)	Newspaper Printing Process	(a) All work on daily newspaper (b) All work on weekly newspaper	Sections 51, 54, 55 and 56 Sections 51, 54, 55 and 56	(a) No worker shall be allowed to work for more than 56 hours in any week. (b) No overtime shall be carried on except for two days prior to the date of the publication of the weekly newspaper. (c) The exemption under this entry shall be availed of only in that section of the press where there is a breakdown of machinery. (d) Intervals for food and rest shall be given to all workers allowed to work on such work.
53.	64(2)(d)	Cashew Nut Factories	Oil extraction work	Section 55	(a) Workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.
54.	64(2)(d)	Cycle manufacturing factories	Work in colouring and enamelling section and semi-automatic plating plant.	Section 55	(a) Workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.
55.	64(2)(d)	Confectionary Manufacturing	Making of malted chocolate flavoured food and chocolate making	Section 55	(a) Workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.
56.	— do —	Chemical products factories	Process of manufacturing activated carbon	Sections 51, 52, 54, 55 and 56	(a) The worker shall be allowed to work on shift of not longer than eight hours' duration. (b) No worker shall be allowed to work in such a manner that the spread over exceeds twelve hours in any day and this shall be permissible only in a case when a shift reliever working on continuous process does not attend at the correct time and alternative relief cannot be arranged. (c) No worker shall be allowed to work more than fifty-six hours in any one week except that when employed as in condition (b) above he shall not be allowed to work for more than sixty-four hours in any one week. (d) Such workers shall be allowed not less than two holidays in each period covered by four consecutive statutory holidays. (e) Intervals for food and rest shall be given to all workers allowed to work on such work.
57.	64(2)(a) and (d)	Cotton spinning and Weaving mills	Work on hot air sizing machines	Section 55	(1) Workers shall be allowed to work on shifts of not longer than 8 hours' duration. (2) Workers shall be given specified rest intervals for food and rest.

1	2	3	4	5	6
58.	64(2)(d)	Enamelled wire manufacturing factories	Work of enamelling of wires	Section 55	(a) Workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.
59.	64(2)(1) and 64(3)	All factories	Loading and unloading of railway wagons	Sections 51, 52, 54, 55, 56 and 61	(a) Exemption from Section 61 may be availed of provided that every worker at the end of the day's work is supplied with a note showing the total number of hours of work put in by such worker. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.
60.	64(2)(d)	Factories where the work of painting, drying, printing and re-drying of metallic collapsible tubes is carried out as a continuous process	Work of printing coating drying of collapsible tubes	Section 55	The worker shall be allowed to work on shifts of not longer than 8 hours duration.
61.	64(2)(d)	Leathercloth factories	Working of continuous coating of PVC, drying fusing in hot air oven and embossing	Section 55	(a) Workers shall be allowed to work on shifts of not longer than eight hours' duration. (b) Intervals for food and rest shall be given to all workers allowed to work on such work.
62.	64(2)(d)	Gum industry	Work performed in connection with slitting dehusking, grinding and packing	Section 55	Intervals for food and rest shall be given to all workers engaged in such work so however that the total number of hours of work without intervals does not exceed six.
63.	64(2)(d)	Lime Bhattas	—	Section 55	(a) The workers shall be allowed to work on shift of not longer than eight hours' duration. (b) An interval of half an hour shall be given to each worker for food and rest.
64.	64(2)(d)	Shellac factories	Workers employed on Bhattas	Section 55	(a) The worker shall be allowed to work on shift of not longer than eight hours' duration. (b) An interval of at least half an hour shall be given to each worker for food and rest.
65.	64(2)(b) 64(2)(1) and 64(3)	All Cotton Ginning factories	Work performed by Gin Fitters and their assistants	Sections 51, 52, 54, 55, 56 and 61	(a) Such worker shall be allowed not less than two holidays in each period covered by four consecutive statutory factory holidays and shall not be allowed to work for more than six hours on any of the other two weekly holidays. (b) The notice required by Section 52 shall be delivered to the office of the Inspector showing on which day holidays will be allowed. (c) Intervals for food and rest shall be given to all workers allowed to work on such work. (d) No worker shall be allowed to work for more than sixty hours in any one week; and (e) Register or muster roll required to be maintained under Section 62 shall show correctly full particulars of periods within which each such worker may be required to work; entries in the register or muster roll shall be upto-date.

1	2	3	4	5	6
66.	64(2)(d)	Electronic Components Factory	Welding, lacquering and colour coding carbon resistors	Sections 51, 54, 55 and 56	As in Serial No. 10 except condition at (d).
67.	64(2)(d) and 64(3)	All Factories	Work on automatic equipment engaged in galvanizing, anodising and enamelling	Sections 51, 52, 54, 55, 56 and 58	(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64. (2) The exemption shall be granted only in respect of adult male workers.
68.	64(2)(k)	Any factory or class or description of factories as may be notified by the Government in the Official Gazette	Work of national importance as may be notified by the Government in the Official Gazette	Sections 51, 52, 54, 55, 56 and 58	(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64. (2) The exemption shall be limited to adult male workers.

**Explanation:**

1. The following shall be considered to be urgent repairs:—

(a) repairs to any part of the machinery, plant or structure of a factory which are of such a nature that delay in their execution would involve danger to human life or safety or the stoppage of manufacturing process;

(b) breakdown repairs to the motive power, transmission or other essential plant of other factories, collieries, railways, dockyards, harbours, tramways, motor transport, gas, electrical generating and transmission, pumping or similar essential or public utility services carried out in general engineering works and foundries and which are necessary to enable such concerns to maintain their main manufacturing processes, production or services during normal working hours;

(c) repairs to deep-sea ships, and repairs to commercial air-craft done in a factory which are essential to enable such ships or aircraft to leave port at proper time or continue their normal operations in a sea-worthy or air-worthy condition, as the case may be; and

(d) repairs in connection with a charge of motive power, for example, from steam to electricity or vice-versa, when such work cannot possibly be done without stoppage of the normal manufacturing process.

2. Periodical cleaning is not included in the terms "examining" or "repairing".

**CHAPTER VII****EMPLOYMENT OF YOUNG PERSONS**

Notice prescribed under sub-section (3) of Section 72:

121. **Notice of periods of works for children.**—The notice of periods of work for child-workers shall be in Form 20

Register prescribed under sub-section (2) of Section 73:

122. **Register for child workers.**—The register of child-workers shall be in Form 21. This register shall be written up afresh each year and shall be preserved for a period of twelve months.

**CHAPTER VIII**

Rules prescribed under Section 83 and 112:

123. **Register of leave with wages.**—(1) The Manager shall keep a register in Form 22 hereinafter called the register of leave with wages:

Provided that if the Chief Inspector is of the opinion that any muster roll or register maintained as part of the routine of the factory, or return made by the manager, gives, in respect of any or all of the workers in the factory, the particulars required for the enforcement of Chapter VIII of the Act; he may, by order, in writing, direct that such muster roll or register or return shall to the corresponding extent, be maintained in place of and be treated as the register or return required under this rule in respect of that factory.

(2) The register of leave with wages shall be preserved for a period of three years after the last entry in it and shall be produced before the Inspector on demand.

124. **Leave book.**—(1) The manager shall provide each worker who has become entitled to leave during a calendar year, with a book in Form 23 (hereinafter called the leave book) not later than the 31st January of the following calendar year. The leave book shall be the property of the worker and the manager or his agent shall not demand it except to make relevant entries of the dates of holidays or interruptions in service, and shall not keep it for more than a week at a time:

Provided that in the case of a worker who is discharged or dismissed from service during the course of the year, that is, who is covered under sub-section (3) of section 79 of the Act, the manager shall issue an abstract from the register of leave with wages (Form 22) within a week from the date of discharge or dismissal as the case may be.

(2) If a worker loses his leave book, the manager shall provide him with another leave book on the payment of paise 25 and shall enter his record thereon—

125. **Medical certificate.**—If any worker is absent from work and if he wants to avail himself of the leave with wages due to him to cover the period of illness as provided in sub-section (7) of section 79, he shall, if so required by the manager, produce a medical certificate signed by a registered medical



practitioner or by a registered or recognised *Vaid* or *Hakim* stating the cause of the absence and the period for which the worker, is in the opinion of such medical practitioner *Vaid* or *Hakim*, unable to attend his work.

**126. Notice to Inspector of involuntary unemployment.**—The manager shall give, as soon as possible, a notice to the Inspector of every case wherein workers have been rendered involuntarily unemployed, giving numbers of persons so unemployed and the reason for their unemployment. Entries to this effect shall be made in the register of leave with wages and the leave book in respect of each worker concerned.

**127. Notice by worker.**—Before or on the completion of a period of twelve months continuous service in the factory, as defined in section 79, a worker may give notice to the manager of his intention not to avail himself of holidays falling due in the following period of twelve months. The manager shall make an entry to that effect in the register of leave with wages and in the leave book of the worker concerned.

**128. Notice of leave with wages.**—(1) Except in regard to a worker who has given notice of his intention not to avail himself of holidays in the year in which they fall due, the manager shall, by a notice displayed at the place at which the notice of the periods of work required under section 61 is displayed, fix the dates on which leave with wages shall be allowed to each worker or group of workers including any worker who has accumulated his leave. This date shall not, in an individual case, be earlier than four weeks from the date of notice unless the worker agrees to avail the leave earlier. The necessary entries shall be made in the register of leave with wages and the leave book of the worker concerned.

(2) As far as circumstances permit, members of the same family comprising husband, wife and children shall be allowed leave on the same date.

(3) The manager may alter the dates fixed for leave only after giving a notice of four weeks to the worker concerned.

(4) A worker may exchange the period of his leave with another worker, subject to the approval of the manager.

**129. Payment of wages if the worker dies.**—If a worker who is not entitled to advance payment in accordance with the provisions of section 81, dies before he resumes work, the balance of his pay due for the period of leave shall be paid to his nominee and failing such nomination, to his legal representative within one week of the intimation of the death of the worker. For this purpose, each worker shall submit a nomination in Form 24 duly signed by himself and attested by two witnesses, to the manager. The nomination shall remain in force until it is cancelled or revised by another nomination.

**130. Register to be maintained in case of exemption under section 84.**—(1) Where an exemption is granted under section 84, the manager shall maintain a register showing the position of each worker as regards leave due, leave taken and wages granted.

(2) He shall display at the main entrance of the factory, a notice giving full details of the system established in the factory for leave with wages and shall send a copy of it to the Inspector.

(3) No alteration shall be made in the scheme approved by the Government at the time of granting exemption under section 84 without its previous sanction.

## CHAPTER IX

### SPECIAL PROVISION

Rule prescribed under Section 87:

**131. Dangerous manufacturing processes or operations.**—The following manufacturing processes or operations when carried on in any factory are declared to be dangerous manufacturing processes or operations under section 87:—

- I. Manufacture of aerated water and processes incidental thereto.
- II. Electrolytic plating or oxidation of metal articles by use of an electrolyte containing chromic acid or other chromium compounds.
- III. Manufacture and repair of electric accumulators.
- IV. Glass manufacture.
- V. Grinding or glazing of metals.
- VI. Manufacture and treatment of lead and certain compounds of lead.
- VII. Generating petrol gas from petrol.
- VIII. Cleaning or smoothing, roughening, etc. of articles by a jet of sand, metal shot or grit or other abrasive propelled by a blast of compressed air or steam.
- IX. Liming and tanning of raw hides and skins and processes incidental thereto.
- X. Certain lead processes carried on in printing presses and type foundries.
- XI. Manufacture of pottery.
- XII. Chemical works.
- XIII. Manufacture of articles from refractory materials.
- XIV. Handling and processing of asbestos, manufacture of any article of asbestos and any other process of manufacture or otherwise in which asbestos is used in any form.
- XV. Handling or manipulation of corrosive substances.
- XVI. Processing of cashewnuts.
- XVII. Compression of oxygen and hydrogen produced by the electrolysis of water.
- XVIII. Process of extracting oils and fats from vegetable and animal sources in solvent extraction plants.
- XIX. Manufacture or manipulation of manganese and its compounds.

- XX. Manufacture or manipulation of dangerous pesticides.
- XXI. Manufacture, handling and usage of benzene and substances containing benzene.
- XXII. Manufacturing process or operations in carbon disulphide plants.
- XXIII. Manufacture or manipulation of carcinogenic dye intermediates.
- XXIV. Operations involving high noise levels.

(2) The provisions specified in the schedules annexed hereto shall apply to any class or description of factories wherein dangerous manufacturing processes or operations specified in each Schedule are carried on.

(3) (a) For the medical examinations of workers to be carried out by the Certifying Surgeon as required by the schedule annexed to this rule, the occupier of the factory shall pay fees at the rate of Rs. 5/- per examination of each worker every time he is examined.

(b) The fees prescribed in sub-rule (3) (a) shall be exclusive of any charges for biological, radiological or other tests which may have to be carried out in connection with the medical examinations. Such charges shall be paid by the occupier.

(c) The fees to be paid for medical examinations shall be paid into the local treasury under the head of account '087—Labour and Employment, C—Fees realised under the Factories Act, 1948'.

(4) Notwithstanding the provision specified in the Schedules annexed to this rule, the Inspector may, by issue of orders in writing to the manager or occupier or both, direct them to carry out such measures, and within such time, as may be specified in such order with a view to removing conditions dangerous to the health of the workers, or to suspend any process, where such process constitutes, in the opinion of the Inspector, imminent danger of poisoning or toxicity.

(5) Any register or record of medical examination and tests connected therewith required to be carried out under any of the Schedules annexed hereto in respect of any worker shall be kept readily available to the Inspector and shall be preserved till the expiry of one year after the worker ceases to be in employment of the factory.

### SCHEDULE I

#### Manufacture of Aerated Waters and processes incidental thereto

1. *Fencing of machines.*—All machines for filling bottles or syphons shall be so constructed, placed or fenced, as to prevent, as far as may be practicable, a fragment of a bursting bottle or syphon from striking any person employed in the factory.

2. *Face guards and gauntlets.*—(1) The occupier shall provide and maintain in good condition for the use of all persons engaged in filling bottles or syphons—

(a) suitable face guards to protect the face, neck and throat; and

(b) suitable gauntlets for both arms to protect the whole hand and arms:

Provided that—

(i) Paragraph 2(1) shall not apply where bottles are filled by means of an automatic machine so constructed that no fragment of a bursting bottle can escape.

(ii) where a machine is so constructed that only one arm of the bottler at work upon it is exposed to danger, a gauntlet need not be provided for the arm which is not exposed to danger.

(2) The occupier shall provide and maintain in good condition for the use of all persons engaged in corking, crowning, screwing, wiring, foiling, capping, sighting or labelling bottles or syphon—

(a) suitable face-guards to protect the face, neck and throat; and

(b) suitable gauntlets for both arms to protect the arm and at least half of the palm and the space between the thumb and forefinger.

3. *Wearing of face guards and gauntlets.*—All persons engaged in any any of the processes specified in paragraph 2 of this Schedule shall, while at work in such processes, wear the face guards and gauntlets provided under the provisions of the said paragraph.

### SCHEDULE II

#### Electrolytic plating or oxidation of metal articles by use of an electrolyte containing chromic acid or other chromium compounds

1. *Definitions.*—For the purposes of this Schedule—

(a) "electrolytic chromium process" means the electrolytic plating or oxidation of metal articles by the use of an electrolyte containing chromic acid or other chromium compounds;

(b) "bath" means any vessel used for an electrolytic chromium process or for any subsequent process;

(c) "employed" means in paragraphs 5, 7, 8 and 9 of this Schedule, employed in any process involving contact with liquid from a bath; and

(d) "suspension" means suspension from employment in any process involving contact with liquid from any bath by written certificate in the health register (Form 26) signed by the Certifying Surgeon who shall have power of suspension as regards all persons employed in any such process.

2. *Exhaust draught.*—An efficient exhaust draught shall be applied to every vessel in which an electrolytic chromium process is carried on. Such draught shall be provided by mechanical means and shall operate on the vapour or spray given off in the process as near as may be at the point of origin. The exhaust draught appliance shall be so constructed, arranged and maintained as to prevent the vapour or spray entering into any room or place in which work is carried on.

3. *Prohibition relating to women and young persons.*—No woman, adolescent or child, shall be employed or permitted to work at a bath.

4. *Floor of workrooms.* — The floor of every workroom containing a bath shall be impervious to water. The floor shall be maintained in good and level condition and shall be washed down at least once a day.

5. *Protective clothing.* — (1) The occupier shall provide and maintain in good and clean condition the following articles of protective clothing for the use of all persons employed on any process at which they are liable to come in contact with liquid from a bath and such clothing shall be worn by the persons concerned —

(a) waterproof aprons and bibs; and

(b) for persons actually working at a bath, loosefitting rubber gloves and rubber boots or other waterproof footwear.

(2) The occupier shall provide and maintain for the use of all persons employed suitable accommodation for the storage and adequate arrangements for the drying of the protective clothing.

6. *Cautionary placard.* — A cautionary placard in the form specified by the Chief Inspector and printed in the language of the majority of the workers employed shall be affixed in a prominent place in the factory where it can be easily and conveniently read by the workers.

7. *Medical requisites.* — The occupier shall provide and maintain a sufficient supply of suitable ointment and impermeable waterproof plaster in a separate box readily accessible to the workers and used solely for the purpose of keeping the ointment and plaster.

8. *Medical examination.* — (1) Every person employed in electrolytic chrome process, shall be examined by a Certifying Surgeon within 30 days of his first employment in the said process and if found fit, shall be granted by the Certifying Surgeon a certificate of fitness in Form 25, and after the first examination he shall be examined by the Certifying Surgeon at intervals of not more than 3 months:

Provided that when the Chief Inspector of Factories is of the opinion that conditions of work in the said process are unsatisfactory, he may by order in writing require the manager of the factory to have the person employed in the said process medically examined by a certifying Surgeon at more frequent intervals.

(2) If at any time, the Certifying Surgeon is of the opinion that any person is no longer fit for employment in the said process on the grounds that continuance therein would involve special danger to the health of the worker, he shall cancel the certificate of fitness issued to him.

9. *Weekly examinations.* — (1) The occupier of every factory shall appoint a qualified medical practitioner whose appointment shall be subject to confirmation by the Chief Inspector.

(2) No person shall be employed in electrolytic chrome process unless he has been examined and found fit for the said process by the qualified medical practitioner. Such examination shall include inspection of hands, forearms and nose and will be

carried out at intervals of not more than one week. The results of such examination shall be maintained in a health register in Form 26. The register shall be kept by the manager and shall contain the names of all persons employed in the said process and the certificate of fitness in respect of each person issued by the Certifying Surgeon shall be attached thereto.

(3) If at any time, the qualified medical practitioner is of opinion that any person is no longer fit for employment in the electrolytic chrome process, he shall make a record of his findings in the health register and intimate the manager in writing that the said person is unfit for work in the said process.

(4) A person so found unfit by the registered medical practitioner shall be sent by the manager to the Certifying Surgeon with a report from the qualified medical practitioner. The Certifying Surgeon after examination may suspend the said person from working in the said process. No person after suspension shall be employed without written sanction from the Certifying Surgeon entered in or attached to the Health Register.

### SCHEDULE III

#### Manufacture and repair of electric accumulators

1. *Savings.* — This Schedule shall not apply to the manufacture or repair of electric accumulators or parts thereof not containing lead or any compound of lead; or to the repair on the premises, of any accumulator forming part of a stationary battery.

2. *Definitions.* — For the purposes of this Schedule.

(a) "lead process" means the melting of lead or any material containing lead, casting, pasting, lead burning, or any other work, including trimming, or any other abrading or cutting of pasted plates, involving the use, movement or manipulation of, or contact with, any oxide of lead;

(b) "manipulation of raw oxide of lead" means any lead process involving any manipulation or movement of raw oxides of lead other than its conveyance in a receptacle or by means of an implement from one operation to another;

(c) "suspension" means suspension from employment in any lead process by written certificate in the health register (Form 7) signed by the Certifying Surgeon who shall have power of suspension as regards all persons employed in any such process; and

(d) "first employment" means first employment in a lead process in a factory or workshop and also re-employment thereof in a lead process following any cessation of employment in such process for a period exceeding three calendar months.

3. *Prohibition relating to women and young persons.* — No woman or young person shall be employed or permitted to work in any lead process or in any room in which the manipulation of raw oxide of lead or pasting is carried on.

4. *Separation of certain processes.* — Each of the following processes shall be carried on in such a

manner and under such conditions as to secure effective separation from one another, and from any other process —

- (a) manipulation of raw oxide of lead;
- (b) pasting;
- (c) drying of pasted plates;
- (d) formation with lead burning (tacking) necessarily carried on in connection therewith;
- (e) melting down of pasted plates; and
- (f) the grid casting shop.

5. *Air space.* — In every room in which lead process is carried on, there shall be at least 15.0 cubic metres of air space for each person employed therein, and in computing this air space no height over 3.75 metres shall be taken into account.

6. *Ventilation.* — Every workroom shall be provided with inlets and outlets of adequate size as to secure and maintain efficient ventilation in all parts of the room.

7. *Distance between workers in pasting room.* — In every pasting room the distance between the centre of the working position of any one paster and that of the paster working nearest to him shall not be less than 1.5 metres.

8. *Floor of workroom.* — (1) The floor of every room in which lead process is carried on shall be —

- (a) of cement or similar material so as to be smooth and impervious to water;
- (b) maintained in sound condition; and
- (c) kept free from materials, plant, or other obstruction not required for, or produced in, the process carried on in the room.

(2) In all such rooms other than grid casting shops the floor shall be cleansed daily after being thoroughly sprayed with water at a time when no other work is being carried on in the room.

(3) In grid casting shops the floor shall be cleansed daily.

(4) Without prejudice to the requirements of sub-paragraphs (1), (2) and (3), where manipulation of raw oxide of lead or pasting is carried on, the floor shall also be —

- (a) kept constantly moist while work is being done;
- (b) provided with suitable and adequate arrangements for drainage; and
- (c) thoroughly washed daily by means of a hose pipe.

9. *Work-benches.* — The work-benches at which any lead process is carried on shall —

- (a) have a smooth surface and be maintained in sound condition; and
- (b) be kept free from all materials or plant not required for, or produced in, the process carried on thereat;

and all such work-benches other than those in grid casting shops shall —

- (c) be cleansed daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat;

and, all such work-benches in grid casting shops, shall —

- (d) be cleansed daily;
- and every work-bench used for pasting shall —
- (e) be covered throughout with sheet lead or other impervious material;
- (f) be provided with raised edges; and
- (g) be kept constantly moist while pasting is being carried on;

and every work-bench used for trimming, brushing, filling or any other abrading or cutting of pasted plates shall —

- (h) be fitted with a top having opening or grill which shall allow any clippings, filing, or dust produced to all into a collecting trough containing water.

10. *Exhaust draught.* — (1) The following processes shall not be carried on without the use of an efficient exhaust draught: —

- (a) melting of lead or materials containing lead;
  - (b) manipulation of raw oxide of lead, unless done in an enclosed apparatus so as to prevent the escape of dust into the workroom;
  - (c) pasting;
  - (d) trimming, brushing, filing or any other abrading or cutting of pasted plates giving rise to dust;
- and
- (e) lead burning, other than —
  - (i) tacking in the formation room; and
  - (ii) chemical burning for the making of lead lining for cell cases necessarily carried on in such a manner that the application of efficient exhaust is impracticable.

(2) Such exhaust draught shall be effected by mechanical means and shall operate on the dust or fume given off as nearly as may be at its point of origin, so as to prevent it entering the air of any room in which persons work.

11. *Fumes and gases from melting pots.* — The products of combustion produced in the heating of any melting pot shall not be allowed to escape into a room in which persons work.

12. *Container for dross.* — A suitable receptacle with tightly fitting cover shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the workroom, except when dross is being deposited therein.

13. *Container for lead waste.* — A suitable receptacle shall be provided in every workroom in which old plates and waste material which may give rise to dust shall be deposited.

14. *Racks and shelves in drying room.* — (1) The racks or shelves provided in any drying room shall

not be more than 2.4 metres from the floor nor more than 60 centimetres in width:

Provided that as regards racks or shelves set or drawn from both sides the total width shall not exceed 120 centimetres.

(2) Such racks or shelves shall be cleaned only after being thoroughly damped unless an efficient suction cleaning apparatus is used for this purpose.

15. *Protective clothing.* — (1) Protective clothing shall be provided and maintained in good repair for all persons employed in —

- (a) manipulation of raw oxide of lead;
- (b) pasting;
- (c) the formation room;

and such clothing shall be worn by the persons concerned.

(2) The protective clothing shall consist of a waterproof apron and waterproof footwear; and, in addition, as regards persons employed in the manipulation of raw oxide of lead or in pasting, head coverings. The head coverings shall be washed daily.

16. *Messroom.* — There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable messroom, which shall be furnished with sufficient tables and benches, and adequate means for warming food. The messroom shall be placed under the charge of a responsible person, and shall be kept clean.

17. *Cloakroom.* — There shall be provided and maintained for the use of all persons employed in a lead process —

(a) a cloakroom for clothing put off during working hours with adequate arrangements for drying the clothing if wet, which accommodation shall be separate from any messroom; and

(b) separate and suitable arrangements for the storage of protective clothing provided under paragraph 15.

18. *Washing facilities.* — (1) There shall be provided and maintained in a clean state and in good repair for the use of all persons employed in a lead process —

(a) a wash place under cover, with either —

(i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow of at least 60 centimetres for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimetres; or

(ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water laid on;

(b) a sufficient supply of clean towels made of suitable materials renewed daily, which supply, in the case of pasters and persons employed in the manipulation of raw oxide of lead, shall include a separate marked towel for each such worker; and

(c) a sufficient supply of soap or other suitable cleansing material and of nail brushes.

(2) There shall in addition be provided means of washing in close proximity to the rooms in which manipulation of raw oxide of lead or pasting is carried on if required by notice in writing from the Chief Inspector.

19. *Time to be allowed for washing.* — Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing to each person who has been employed in the manipulation of raw oxide of lead or in pasting:

Provided that if there be one basin or 60 centimetres of trough for each such person this paragraph shall not apply.

20. *Facilities for bathing.* — Sufficient bath accommodation to the satisfaction of the Chief Inspector shall be provided for all persons engaged in the manipulation of raw oxide of lead or in pasting, and a sufficient supply of soap and clean towels.

21. *Food, drinks, etc. prohibited to workrooms.* — No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any workroom in which any lead process is carried on.

22. *Storage of lead oxides.* — All bags containing or having contained oxide of lead shall be kept in a closed room used only for this purpose.

23. *Re-use of paper or cloth restricted.* — (a) Paper once used for backing or drying pasted plates shall not be used again in the factory.

(b) Cloth once used for backing or drying pasted plates shall not be stored or handled unless it is moist so as not to give off dust.

24. *Medical examination.* — (1) Every person employed in a lead process shall be examined by the Certifying Surgeon within seven days preceding or following the date of his first employment in such process and thereafter shall be examined by the Certifying Surgeon once in every calendar month, or at such other intervals as may be specified in writing by the Chief Inspector, on a day of which due notice shall be given to all concerned.

(2) A health register in Form 7 containing the names of all persons employed in a lead process shall be kept.

(3) No person after suspension shall be employed in a lead process without written sanction from the Certifying Surgeon entered in or attached to the health register.

#### SCHEDULE IV

##### Glass manufacture

1. *Definitions.* — For the purposes of this Schedule —

(a) "efficient exhaust draught" means localised ventilation effected by mechanical means for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from

escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fume or dust originates;

(b) "lead compound" means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid a quantity of soluble lead compound exceeding, when calculated as lead monoxide, five per cent of the dry weight of the portion taken for analysis.

The method of treatment shall be as follows:—

A weighed quantity of the material which has been dried at 100 degrees centigrade and thoroughly mixed shall be continuously shaken for one hour at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate.

(c) "suspension" means suspension from employment in any process specified in paragraph 3 by written certificate in the health register, Form 7, signed by the Certifying Surgeon who shall have power of suspension as regards all persons employed in any such process.

2. *Exhaust draught.*—The following processes shall not be carried on except under an efficient exhaust draught or such other conditions as may be approved by the Chief Inspector:—

(a) the mixing of raw materials to form a "batch";

(b) the dry grinding, glazing and polishing of glass or any article of glass;

(c) all processes in which hydrofluoric acid fumes or ammoniacal vapours are given off;

(d) all processes in the making of furnace moulds or "pots" including the grinding or crushing of used "pots"; and

(e) all processes involving the use of a dry lead compound.

3. *Prohibition relating to women and young persons.*—No women or young person shall be employed or permitted to work in any of the operations specified in paragraph 2 or at any place where such operations are carried on.

4. *Floor and work-benches.*—The floor and work-benches of every room in which a dry compound of lead is manipulated or in which any process is carried on giving off silica dust shall be kept moist and shall comply with the following requirements—

(a) the floor shall be—

(i) of cement or similar material so as to be smooth and impervious to water;

(ii) maintained in sound condition; and

(iii) cleansed daily after being thoroughly spread with water at a time when no other work is being carried on in the room; and

(b) the work-benches shall—

(i) have a smooth surface and be maintained in sound condition; and

(ii) be cleansed daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat.

5. *Use of hydrofluoric acid.*—The following provisions shall apply to rooms in which glass is treated with hydrofluoric acid—

(a) there shall be inlets and outlets of adequate size so as to secure and maintain efficient ventilation in all parts of the room;

(b) the floor shall be covered with guttaparcha and be tight and shall slope gently down to a covered drain;

(c) the workplaces shall be so enclosed in projecting hoods that openings required for bringing in the objects to be treated shall be as small as practicable; and

(d) the efficient exhaust draught shall be so contrived that the gases are exhausted downwards.

6. *Storage and transport of hydrofluoric acid.*—Hydrofluoric acid shall not be stored or transported except in cylinders or receptacles made of lead or rubber.

7. *Blow pipes.*—Every glass blower shall be provided with a separate blow pipe bearing the distinguishing mark of the person to whom it is issued and suitable facilities shall be readily available to every glass blower for sterilising his blow pipe.

8. *Food, drinks, etc. prohibited in workroom.*—No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any room or workplace wherein any process specified in paragraph 2 is carried on.

9. *Protective clothing.*—The occupier shall provide, maintain in good repair and keep in a clean condition for the use of all persons employed in the processes specified in paragraph 2, suitable protective clothing, footwear and goggles according to the nature of the work and such clothing, footwear, etc. shall be worn by the persons concerned.

10. *Washing facilities.*—There shall be provided and maintained in a clean state and in good repair for the use of all persons employed in the processes specified in paragraph 2;

(a) a wash place with either—

(i) a trough with a smooth impervious surface fitted with a waste pipe, without plug, and of sufficient length to allow of at least 60 centimetres for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimetres; or

(ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available;



(b) a sufficient supply of clean towels made of suitable material renewed daily with a sufficient supply of soap or other suitable cleansing material and of nail brushes; and

(c) a sufficient number of stand pipes with taps the number and location of which shall be to the satisfaction of the Chief Inspector.

11. *Medical examination.* — (1) Every person employed in any process specified in paragraph 2 shall be examined by the Certifying Surgeon within seven days preceding or following the date of his first employment in such process and thereafter he shall be examined by the Certifying Surgeon once in every calendar month or at such other intervals as may be specified in writing by the Chief Inspector, on a day of which due notice shall be given to all concerned.

(2) A health register in Form 7 containing the names of all persons employed in any process specified in paragraph 2 shall be kept.

(3) No person after suspension shall be employed in any process specified in paragraph 2 without written sanction from the Certifying Surgeon entered in or attached to the health register.

12. *Exemption.* — If the Chief Inspector is satisfied in respect of any factory or any class of process that, owing to the special methods of work or the special conditions in a factory or otherwise, any of the requirements of this Schedule can be suspended or relaxed without danger to the persons employed therein, or that the application of this Schedule or any part thereof is for any reason impracticable, he may by certificate in writing authorise such suspension or relaxation as may be indicated in the certificate for such period and on such conditions as he may think fit.

#### SCHEDULE V

##### Grinding or glazing of metals and processes incidental thereto

1. *Definitions.* — For the purposes of this Schedule —

(a) "grindstone" means a grindstone composed of natural or manufactured sandstone but does not include a metal wheel or cylinder into which blocks of natural or manufactured sandstone are fitted;

(b) "abrasive wheel" means a wheel manufactured of bonded emery or similar abrasive;

(c) "grinding" means the abrasion, by aid of mechanical power, of metal, by means of a grindstone or abrasive wheel;

(d) "glazing" means the abrading, polishing or finishing by aid of mechanical power, of metal, by means of any wheel, buff, mop or similar appliance to which any abrading or polishing substance is attached or applied;

(e) "racing" means the turning up, cutting or dressing of a revolving grindstone before it is brought into use for the first time;

(f) "hacking" means the chipping of the surface of a grindstone by a hack or similar tool; and

(g) "rodding" means the dressing of the surface of a revolving grindstone by the application of a road, bar or strip of metal to such surface.

2. *Equipment for removal of dust.* — No racing, dry grinding or glazing shall be performed without —

(a) a hood or other appliance so constructed, arranged, placed and maintained as substantially to intercept the dust thrown off;

(b) a duct of adequate size, air tight and so arranged as to be capable of carrying away the dust, which duct shall be kept free from obstruction and shall be provided with proper means of access for inspection and cleaning, and where practicable, with a connection at the end remote from the fan to enable the Inspector to attach thereto any instrument necessary for ascertaining the pressure of air in the said duct; and

(c) a fan or other efficient means of producing a draught sufficient to extract the dust:

Provided that the Chief Inspector may accept any other appliance that is, in his opinion, as effectual for the interception, removal and disposal of dust thrown off as a hood, duct and fan would be.

3. *Restriction on employment on grinding operations.* — Not more than one person shall at any time perform the actual process of grinding or glazing upon a grindstone, abrasive wheel or glazing appliance:

Provided that this paragraph shall not prohibit the employment of persons to assist in the manipulation of heavy or bulky articles at any such grindstone, abrasive wheel or glazing appliance.

4. *Glazing.* — Glazing or other processes, except processes incidental to wet grinding upon a grindstone shall not be carried on in any room in which wet grinding upon a grindstone is done.

5. *Hacking and rodding.* — Hacking or rodding shall not be done unless during the process either an adequate supply of water is laid on at the upper surface of the grindstone or adequate appliances for the interception of dust are provided in accordance with the requirements of paragraph 2.

6. *Examination of dust equipment.* — (1) All equipment for the extraction or suppression of dust shall at least once in every six months be examined and tested by a competent person, and any defect disclosed by such examination and test shall be rectified as soon as practicable.

(2) A register containing particulars of such examination and tests shall be kept in Form 27.

7. *Exception.* — (1) Nothing in this Schedule shall apply to any factory in which only repairs are carried on except any part thereof in which one or more persons are wholly or mainly employed in the grinding or glazing of metals.

(2) Nothing in this Schedule except paragraph 3 shall apply to any grinding or glazing of metals carried on intermittently and at which no person is employed for more than 12 hours in any week.

8. *Exemption.* — The Chief Inspector may by certificate in writing, subject to such conditions as he may specify therein, relax or suspend any of the provisions of this Schedule in respect of any factory

if owing to the special methods of work or otherwise such relaxation or suspension is practicable without danger to the health or safety of the persons employed.

## SCHEDULE VI

### Manufacture and treatment of lead and certain compounds of lead

1. *Application.* — This Schedule shall apply to all factories or parts of factories in which any of the following operations are carried on:—

(a) work at a furnace where the reduction or treatment of zinc or lead ores is carried on;

(b) the manipulation, treatment or reduction of ashes containing lead, the desilvering of lead or the melting of scrap lead or zinc;

(c) the manufacture of solder or alloys containing more than ten per cent of lead;

(d) the manufacture of any oxide, carbonate, sulphate, chromate, acetate, nitrate or silicate of lead;

(e) the handling or mixing of lead tetra-ethyl;

(f) any other operation involving the use of a lead compound; and

(g) the cleaning of workrooms where any of the operations aforesaid are carried on.

2. *Definitions.* — For the purposes of this Schedule —

(a) "lead compound" means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid, a quantity of soluble lead compound exceeding, when calculated as lead monoxide, five per cent of the "dry weight" of the portion taken for analysis. In the case of paints and similar products and other mixtures containing oil or fat "dry weight" means the dry weight of the material remaining after the substance has been thoroughly mixed and treated with suitable solvents to remove oil, fats, varnish or other media.

The method of treatment shall be as follows:—

A weighed quantity of the material which has been dried at 100°C and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered.

The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate;

(b) "efficient exhaust draught" means localised ventilation affected by heat or mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed

efficient which fails to remove smoke generated at the point where such gas, vapour, fumes or dust originate.

3. *Prohibition relating to women and young persons.* — No women or young person shall be employed or permitted to work in any of the operations specified in paragraph 1.

4. *Requirements to be observed.* — No person shall be employed or permitted to work in any process involving the use of lead compounds if the process is such that dust or fumes from a lead compound is produced therein, or the persons employed therein are liable to be splashed with any lead compound in the course of their employment unless the provisions of paragraphs 5 to 13 are complied with.

5. *Exhaust draught.* — Where dust, fume, gas or vapour is produced in the process, provision shall be made for removing them by means of an efficient exhaust draught so contrived as to operate on the dust, fume, gas or vapour as closely as possible to the point of origin.

6. *Food, drinks, etc. prohibited in workroom.* — No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any workroom in which the process is carried on and no person shall remain in any such room during intervals for meals or rest.

7. *Protective clothing.* — Suitable protective overalls and head coverings shall be provided, maintained and kept clean by the occupier and such overalls and head coverings shall be worn by the persons employed.

8. *Cleanliness of workrooms, tools, etc.* — The rooms in which the persons are employed and all tools and apparatus used by them shall be kept in a clean state.

9. *Washing facilities.* — (1) The occupier shall provide and maintain for the use of all persons employed suitable washing facilities consisting of:

(a) a trough with a smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 60 centimetres for every ten persons employed at any one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimetres; or

(b) at least one wash-basin for every ten persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of clean water;

together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing material and clean towels.

(2) The facilities so provided shall be placed under the charge of a responsible person and shall be kept clean.

10. *Messroom or canteen.* — The occupier shall provide and maintain for the use of the persons employed suitable and adequate arrangements for taking meals. The arrangements shall consist of the use of a room separate from any workroom which

shall be furnished with sufficient tables and benches, and unless a canteen serving hot meals is provided, adequate means of warming the food. The room shall be adequately ventilated by the circulation of fresh air, shall be placed under the charge of a responsible person and shall be kept clean.

11. *Cloakroom.* — The occupier shall provide and maintain for the use of persons employed, suitable accommodation for clothing not worn during hours, and for the drying of wet clothes.

12. *Certificate of fitness.* — A person medically examined under paragraph 13 and found fit for employment shall be granted by the Certifying Surgeon a certificate of fitness in Form 28 and such certificate shall be in the custody of the manager of the factory. The certificate shall be kept readily available for inspection by any Inspector and the person granted such a certificate shall carry with him, while at work, a token giving reference to such certificate.

13. *Medical examination.* — (1) The person so employed shall be medically examined by the Certifying Surgeon within 14 days of his first employment in such process and thereafter he shall be examined by the Certifying Surgeon at intervals of not more than 3 months, and a record of such examination shall be entered by the Certifying Surgeon in the special certificate of fitness granted under paragraph 12.

(2) If at any time the Certifying Surgeon is of opinion that any person is no longer fit for employment on the grounds that continuance therein would involve special danger to his health, he shall cancel the special certificate of fitness of that person.

(3) No person whose special certificate of fitness has been cancelled shall be employed unless the Certifying Surgeon, after re-examination, again certifies him to be fit for employment.

14. *Exemption.* — Where the Chief Inspector is satisfied that all or any of the provisions of this Schedule are not necessary for the protection of the persons employed, he may by certificate in writing exempt any factory from all or any of such provisions, subject to such conditions as he may specify.

## SCHEDULE VII

### Generating petrol, gas from petrol

1. *Prohibition relating to women and young persons.* — No woman or young person shall be employed or permitted to work in or shall be allowed to enter any building in which the generation of gas from dangerous petroleum as defined in clause (b) of Section 2 of the Petroleum Act, 1934, is carried on.

2. *Flame traps.* — The plant for generation of gas from dangerous petroleum and associated piping and fittings shall be fitted with at least two efficient flame traps so designed and maintained as to prevent a flash back from any burner to the plant. One of these traps shall be fitted as close to the plant as possible. The plant and all pipes and valves shall be installed and maintained free from leaks.

3. *Generating building or room.* — All plants for generation of gas from dangerous petroleum erected

after the coming into force of the provisions specified in this schedule, shall be erected outside the factory building proper in a separate well ventilated building (hereinafter referred to as the "generating building"). In the case of such plants erected before the coming into force of the provisions specified in this Schedule, there shall be no direct communication between the room where such plants are erected (hereinafter referred to as the "generating room") and the remainder of the factory building. So far as practicable, all such generating rooms shall be constructed of fire-resisting materials.

Provided that where the Government is satisfied in respect of any factory that the plant for generating of gas from dangerous petroleum as defined in clause (b) of Section 2 of the Petroleum Act, 1934, is on account of the special precautions adopted or contrivances used for such plant, not likely to expose any persons employed in such factory to any serious risk of bodily injury, the Government may, by notification on the Official Gazette, exempt such factory wholly or partially from the provisions of this clause for such period and on such conditions as it may specify.

4. *Fire extinguishers.* — An efficient means of extinguishing petrol fires shall be maintained in an easily accessible position near the plant for generation of gas from dangerous petroleum.

5. *Plant to be approved by Chief Inspector.* — Petrol gas shall not be manufactured except in a plant for generating petrol gas, the design and construction of which has been approved by the Chief Inspector.

6. *Escape of petrol.* — Effective steps shall be taken to prevent petrol from escaping into any drain or sewer.

7. *Prohibition relating to smoking.* — No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in the generation room or building or in the vicinity thereof and a warning notice in the language understood by the majority of the workers shall be posted in the factory prohibiting smoking and the carrying of matches, fire or naked light or other means of producing a naked light or spark into such room or building.

8. *Access to petrol or container.* — No unauthorised person shall have access to any petrol or to a vessel containing or having actually contained petrol.

9. *Electric fittings.* — All electric fittings shall be of flameproof construction and all electric conductors shall either be enclosed in metal conduits or be lead-sheathed.

10. *Construction of doors.* — All doors in the generating room or building shall be constructed to open outwards or to slide and no door shall be locked or obstructed or fastened in such a manner that it cannot be easily and immediately opened from the inside while gas is being generated and any person is working in the generating room or building.

11. *Repair of containers.* — No vessel that has contained petrol shall be repaired in a generating room or building and no repairs to any such vessel

shall be undertaken unless live steam has been blown into the vessel and until the interior is thoroughly steamed out or other equally effective steps have been taken to ensure that it has been rendered free from petrol or inflammable vapour.

### SCHEDULE VIII

**Cleaning or smoothing, roughening, etc., of articles, by a jet of sand, metal shot, or grit, or other abrasive propelled by a blast of compressed air or steam**

1. *Definitions.* — For the purposes of this Schedule —

(a) "blasting" means cleaning, smoothing, roughening or removing of any part of the surface of any article by the use as an abrasive of a jet of sand, metal shot or grit or other material, propelled by a blast of compressed air or steam;

(b) "blasting enclosure" means a chamber, barrel, cabinet or any other enclosure designed for the performance of blasting therein.

(c) "blasting chamber" means a blasting enclosure in which any person may enter at any time in connection with any work or otherwise; and

(d) "cleaning of castings" where done as an incidental or supplemental process in connection with the making of metal castings, means the freeing of the casting from adherent sand or other substance and includes the removal of cores and the general smoothening of a casting, but does not include free treatment.

2. *Prohibition of sand blasting.* — Sand or any other substance containing free silica shall not be introduced as an abrasive into any blasting apparatus and shall not be used for blasting:

Provided that this clause shall come into force two years after the coming into operation of these rules:

Provided further that no woman or young person shall be employed or permitted to work at any operation of sand blasting.

3. *Precautions in connection with blasting operations.* — (i) Blasting to be done in blasting enclosure —

Blasting shall not be done except in a blasting enclosure and no work other than blasting and any work immediately incidental thereto and clearing and repairing of the enclosure including the plant and appliances situated therein, shall be performed in a blasting enclosure. Every door, aperture and joint of blasting enclosure shall be kept closed and airtight while blasting is being done therein.

(ii) *Maintenance of blasting enclosure* —

Blasting enclosure shall always be maintained in good condition and effective measures shall be taken to prevent dust escaping from such enclosure, and from apparatus connected therewith, into the air of any room.

(iii) *Provision of separating apparatus* —

There shall be provided and maintained for and in connection with every blasting enclosure, effi-

cient apparatus for separating, so far as practicable, abrasive which has been used for blasting and which is to be used again as an abrasive, from dust or particles of other materials arising from blasting; and no such abrasive shall be introduced into any blasting apparatus and used for blasting until it has been so separated.

Separating apparatus shall be provided with exhaust draught arrangement to extract and remove the dust by special methods and in such manner so that it shall not escape into air of any rooms in which persons are employed:

Provided that this clause shall not supply, except in the case of blasting chambers, to blasting enclosures constructed or installed before the coming into force of this Schedule, if the Chief Inspector is of opinion that it is not reasonably practicable to provide such separating apparatus.

(iv) *Provision of ventilating plant* —

There shall be provided and maintained in connection with every blasting enclosure efficient ventilating plant to extract, by exhaust draught effected by mechanical means, dust produced in the enclosure. The dust extracted and removed shall be disposed of by such method and in such manner that it shall not escape into the air of any room; and every other filtering or settling device situated in a room in which persons are employed, other than persons attending to such bag or other filtering or settling device, shall be completely separated from the general air of that room in a enclosure ventilated to the open air.

(v) *Operation of ventilating plant* —

The ventilating plant provided for the purpose of sub-paragraph (4) shall be kept in continuous operation whenever the blasting enclosure is in use whether or not blasting is actually taking place therein, and in the case of a blasting chamber, it shall be in operation even when any person is inside the chamber for the purpose of cleaning.

4. *Inspection and examination.* — (1) Every blasting enclosure shall be specially inspected by a competent person at least once in every week in which it is used for blasting. Every blasting enclosure, the apparatus connected therewith and the ventilating plant shall be thoroughly examined and in the case of ventilating plant, tested by a competent person at least once in every three months.

(2) Particulars of the result of every such inspection, examination or test shall forthwith be entered in a register which shall be kept in a form approved by the Chief Inspector and shall be available for inspection by any workman employed in or in connection with blasting in the factory. Any defect found on any such inspection, examination or test shall be immediately reported by the person carrying out the inspection, examination or test to the occupier, manager or other appropriate person and without prejudice to the foregoing requirements of this Schedule, shall be removed without avoidable delay.

(3) Every blasting chamber, separating apparatus, and ventilating plant shall be thoroughly inspected at an interval of 6 months for detecting any defect in their efficient operations, and the defects so noticed shall be rectified forthwith.

**5. Provision of protective helmets, gauntlets and overalls.**—(1) There shall be provided and maintained for the use of all persons who are employed in a blasting chamber, whether in blasting or in any work connected therewith or in cleaning such a chamber, protective helmets of a type approved by a certificate of the Chief Inspector; and every such person shall wear the helmet provided for this use whilst he is in the chamber and shall not remove it until he is outside the chamber.

(2) Each protective helmet shall carry a distinguishing mark indicating the person by whom it is intended to be used and no person shall be allowed or required to wear a helmet not carrying his mark or a helmet which has been worn by another person and has not since been thoroughly disinfected.

(3) Each protective helmet when in use shall be supplied with clean and not unreasonably cold air at a rate of not less than 170 litres per minute.

(4) Suitable gauntlets, overalls, dust-proof goggles and boots shall be provided for the use of all persons while performing blasting or assisting at blasting and every such person shall while so engaged, wear the gauntlets, overalls, dust-proof goggles and boots so provided.

**(6). Precautions in connection with cleaning and other work.**—(1) Where any person is engaged upon cleaning of any blasting apparatus or blasting enclosure or of any apparatus or ventilating plant connected therewith or the surroundings thereof or upon any other work in connection with any blasting apparatus or blasting enclosure or with any apparatus or ventilating plant connected therewith so that he is exposed to the risk of inhaling dust which has arisen from blasting, all practicable measure shall be taken to prevent such inhalation.

(2) In connection with any cleaning operation referred to in paragraph 5, and with the removal of dust from filtering or settling devices all practicable measures shall be taken to dispose of the dust in such a manner that it does not enter the air of any room. Vacuum cleaners shall be provided and used wherever practicable for such cleaning operations.

**7. Storage accommodation for protective wear.**—Adequate and suitable storage accommodation for the helmets, gauntlets and overalls required to be provided by paragraph 5 shall be provided outside and conveniently near to every blasting enclosure and such accommodation shall be kept clean. Helmets, gauntlets and overalls when not in actual use shall be kept in this accommodation.

**8. Maintenance and cleaning of protective wear.**—All helmets, gauntlets, overalls and other protective devices or clothing provided and worn for the purposes of this schedule, shall be kept in good condition and so far as is reasonably practicable shall be cleaned on every weekday in which they are used. Where dust arising from the cleaning of such protective clothing or devices is likely to be inhaled, all practicable measures shall be taken to prevent such inhalation. Vacuum cleaners shall, wherever practicable, be used for removing dust from such clothing and compressed air shall not be used for removing dust from any clothing.

**9. Maintenance of vacuum cleaning plant.**—Vacuum cleaning plant used for the purpose of this Schedule shall be properly maintained.

**10. Restrictions in employment of young persons.**—No woman or young person under 18 years of age shall be employed in blasting or in assisting at blasting or in any blasting chamber or in the cleaning of any blasting apparatus or any blasting enclosure or any apparatus or ventilating plant connected therewith or be employed on maintenance or repair work at such apparatus, enclosure or plant.

(2) No woman or young person under 18 years of age shall be employed to work regularly within twenty feet of any blasting enclosure unless the enclosure is in a room and he is outside that room where he is effectively separated from any dust coming from the enclosure.

**11. Medical examination.**—(1) Every person employed in blasting or assisting at blasting or in any blasting chamber or in the cleaning of any blasting apparatus or any blasting enclosure or any apparatus or ventilating plant connected therewith or be employed on maintenance or repair work at such apparatus, enclosure or plant, shall be medically examined by the Certifying Surgeon within thirty days of his first employment, the record of which shall be entered in Form No. 7, and if found fit for employment in the said process, he shall be granted by the Certifying Surgeon, a certificate of fitness in Form No. 28.

(2) After the first examination, the person so examined shall be examined by the Certifying Surgeon at intervals of twelve months and a record of such examinations shall be entered by the Certifying Surgeon in Form No. 7.

(3) If at any time the Certifying Surgeon is of the opinion that the person employed in the said process shall be examined radiologically by a qualified radiologist, he may direct the occupier to arrange for such examination at his cost and then to submit the standard size chest X-Ray plate of the worker to the Certifying Surgeon.

(4) If at any time the Certifying Surgeon is of the opinion that any person is no longer fit for employment on the grounds that continuance therein would involve special danger to health, he shall cancel the special certificate of fitness in Form No. 28 of that person and record in Form No. 7.

(5) No person whose special certificate of fitness in Form No. 28 has been cancelled, shall be employed or permitted to work unless the Certifying Surgeon, after re-examination, again certifies him to be fit for employment in the operations.

(6) The register of the special certificates in Form No. 28 granted by the Certifying Surgeon and the record made in Form No. 7 by him shall be in the custody of the manager of the factory and shall be kept readily available for inspection by an Inspector.

**12. Power to exempt or relax.**—If the Chief Inspector is satisfied that in any factory or any class of factory, the use of sand or other substance containing free silica as an abrasive in blasting is necessary for a particular manufacture or process



(other than the process incidental or supplemental to making of metal castings) and that the manufacture or process cannot be carried on without the use of such abrasive or that owing to the special conditions or special method of work or otherwise any requirement of this Schedule can be suspended either temporarily or permanently, or can be relaxed without endangering the health of the persons employed or that application of any such requirements is for any reason impracticable or inappropriate, he may, with the previous sanction of the State Government, by an order in writing exempt the said factory or class of factory from such provisions of this Schedule, to such an extent and subject to such conditions and for such period as may be specified in the said order.

(2) Where an exemption has been granted under sub-paragraph (1), a copy of the order shall be displayed at a notice board at a prominent place at the main entrance or entrances to the factory and also at the place where the blasting is carried on.

### SCHEDULE IX

#### Liming and tanning of raw hides and skins and processes incidental thereto

1. *Cautionary notices.* — (1) Cautionary notices as to anthrax in the form specified by the Chief Inspector shall be affixed in prominent positions in the factory where they may be easily and conveniently read by the persons employed.

(2) A copy of a warning notice as to anthrax in the form specified by the Chief Inspector shall be given to each person employed when he is engaged, and subsequently if still employed, on the first day of each calendar year.

(3) Cautionary notices as to the effects of chrome on the skin shall be affixed in prominent positions in every factory in which chrome solutions are used and such notices shall be so placed as to be easily and conveniently read by the persons employed.

(4) Notices shall be affixed in prominent places in the factory stating the position of the first-aid box or cupboard and the name of the person in charge of such box or cupboard.

(5) If any person employed in the factory is illiterate, effective steps shall be taken to explain carefully to such illiterate person the contents of the notice specified in sub-paragraphs (1), (2) and (4) and if chrome solutions are used in the factory, the contents of the notice specified in sub-paragraph (3).

2. *Protective clothing.* — The occupier shall provide and maintain in good condition the following articles of protective clothing —

(a) waterproof footwear leg coverings, aprons and gloves for persons employed in processes involving contact with chrome solutions, including the preparation of such solutions;

(b) gloves and boots for persons employed in lime yard; and

(c) protective footwear, aprons and gloves for persons employed in processes involving the hand-

ing of hides or skins, other than in processes specified in sub-paragraphs (a) and (b):

Provided that the gloves aprons, leg coverings or boots may be of rubber, or leather, but the gloves and boots to be provided under sub-paragraphs (a) and (b) shall be of rubber:

Provided further that the gloves may not be provided to persons fleshing by hand or employed in processes in which there is no risk of contact with lime, sodium sulphide or other caustic liquor.

3. *Washing facilities, messroom and cloakroom.* — There shall be provided and maintained in a clean state and in good repair for the use of all persons employed —

(a) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow of at least 60 centimetres for every ten persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimetres; or at least one wash basin for every ten such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water; together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing material and clean towels;

(b) a suitable messroom, adequate for the number remaining on the premises during the meal intervals, which shall be furnished with sufficient tables and benches and adequate means for warming food and for boiling water. The messroom shall —

(i) be separate from any room or shed in which hides or skins are stored, treated or manipulated;

(ii) be separate from the cloakroom; and

(iii) be placed under the charge of a responsible person; and

(c) suitable accommodation for clothing put off during working hours and another accommodation for protective clothing and also adequate arrangements for drying up the clothing in both the cases, if wet. The accommodation so provided shall be kept clean at all times and placed under the charge of a responsible person.

4. *Food, drinks, etc. prohibited in workrooms.* — No food, drinks, pan and supari or tobacco shall be brought into or consumed by any worker in workroom or shed in which hides or skins are stored, treated or manipulated.

5. *First-aid arrangements.* — The occupier shall —

(a) arrange for an inspection of the hands of all persons coming into contact with chrome solution to be made twice a week by a responsible person; and

(b) provide and maintain a sufficient supply of suitable ointment and impermeable waterproof plaster in a box readily accessible to the worker and used solely for the purpose of keeping the ointment and plaster.



## SCHEDULE X

**Printing Presses and Type Foundaries and certain lead processes carried therein**

1. *Definitions.* — For the purposes of this Schedule —

(a) "lead material" means material containing not less than five per cent of lead;

(b) "Lead process" means —

(i) the melting of lead or any lead material for casting and mechanical composing;

(ii) the recharging of machines with used lead material;

(iii) any other work including removal of dross from melting pots and cleaning of plungers; and

(iv) manipulation, movement or other treatment of lead material.

(c) "efficient exhaust draught" means localised ventilation effected by heat or mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove gas, vapour, fume or dust at the point where they originate.

2. *Exhaust draught.* — (1) None of the following processes shall be carried on except with an efficient exhaust draught unless carried on in such a manner as to prevent free escape of gas, vapour, fumes or dust into any place in which work is carried on, or unless carried on in electrically heated and thermostatically controlled melting pots: —

(a) melting lead material or slugs; and

(b) heating lead material so that vapour containing lead is given off.

(2) Such exhaust draught shall be effected by mechanical means and so contrived as to operate on the dust, fume, gas or vapour given off as closely as may be at its point of origin.

3. *Prohibition relating to women and young persons.* — No woman or young person below 18 years of age shall be employed or permitted to work in any lead process.

4. *Separation of certain processes.* — Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another and from any other processes: —

(a) melting of lead or any lead material;

(b) casting of lead ingots; and

(c) mechanical composing.

5. *Container for dross.* — A suitable receptacle with tight fitting cover shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the workroom near the machine except when the dross is being deposited therein.

6. *Floor of workroom.* — The floor of every workroom where lead process is carried on shall be —

(a) of cement or similar material so as to be smooth and impervious to water;

(b) maintained in sound condition; and

(c) shall be cleansed throughout daily after being thoroughly damped with water at a time when no other work is being carried on at the place.

7. *Messroom.* — There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable messroom which shall be furnished with sufficient tables and benches.

8. *Washing facilities.* — There shall be provided and maintained in a clean state and in good repair for the use of all persons employed in a lead process —

(a) a wash place with either —

(i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60 centimetres for every five such persons employed at any one time and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimetres; or

(ii) at least one wash basin for every five such persons employed at any one time fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available; and

(b) a sufficient supply of clean towels made of suitable material, renewed daily with a sufficient supply of soap or other suitable cleansing material.

9. *Food, drinks, etc. prohibited in workrooms.* — No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any workroom in which any lead process is carried on.

10. *Medical examination.* — (1) Every person employed in a lead process shall be examined by the Certifying Surgeon within 14 days of his first employment in such processes and thereafter shall be examined by the Certifying Surgeon at intervals of not more than 3 months, and a record of such examinations shall be entered by the Certifying Surgeon in the special certificate of fitness in Form 28.

(2) A health register containing names of all persons employed in any lead process shall be kept in Form 7.

(3) No person after suspension shall be employed in a lead process without the written sanction from the Certifying Surgeon entered in the health register.

11. *Exemption.* — Where the Chief Inspector is satisfied that all or any of the provisions of this Schedule are not necessary for the protection of persons employed, he may by certificate in writing exempt any factory from all or any of such provisions subject to such conditions as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector.

## SCHEDULE XI

## Manufacture of pottery

1. *Savings.*—These provisions shall not apply to a factory in which any of the following articles, but no other pottery are made:—

(a) unglazed or salt glazed bricks and tiles; and

(b) architectural terra-cotta made from plastic clay and either unglazed or glazed with a leadless glaze only.

2. *Definitions.*—For the purposes of this Schedule—

(a) "pottery" includes earthenware, stoneware, porcelain, china tiles, and any other articles made from such clay or from a mixture containing clay and other materials such as quartz, flint, feldspar and gypsum;

(b) "efficient exhaust draught" means localised ventilation effected by mechanical or other means for removal of dust or fume so as to prevent it from escaping into air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove effectively dust or fume generated at the point where dust or fume originates;

(c) "fettling" includes scalloping, towing, sand papering, sand sticking, brushing or any other process of cleaning of potteryware in which dust is given off;

(d) "leadless glaze" means a glaze which does not contain more than one per cent of its dry weight, of a lead compound calculated as lead monoxide;

(e) "low solubility glaze" means a glaze which does not yield to dilute hydrochloric acid more than five per cent of its dry weight, of a soluble lead compound calculated as lead monoxide when determined in the manner described below:

A weighed quantity of the material which has been dried at 100 degrees centigrade and thoroughly mixed shall be continuously shaken for one hour at the common temperature with 1000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate;

(f) "ground or powdered flint or quartz" does not include natural sands; and

(g) "potter's shop" includes all places where pottery is formed by pressing or by any other process and all places where shaping, fettling or other treatment of pottery articles period to placing for the biscuit fire is carried on.

3. *Efficient exhaust draught.*—The following processes shall not be carried on without the use of an efficient exhaust draught:—

(a) all processes involving the manipulation or use of a dry and unfritted lead compound;

(b) fettling operations of any kind, whether on greenware or biscuit, provided that this shall not apply to the wet fettling and to the occasional finishing of pottery articles without the aid of mechanical power;

(c) sifting of clay dust as any other material for making tiles or other articles by pressure, except where—

(i) this is done in a machine so enclosed as to effectually prevent the escape of dust; or

(ii) the material to be sifted is so damp that no dust can be given off;

(d) pressing of tiles from clay dust, an exhaust opening being connected with each press, and pressing from clay dust of articles other than tiles, unless the material is so damp that no dust is given off;

(e) fettling of tiles made from clay dust by pressure, except where the fettling is done wholly on, or with, damp material, and fettling of other articles made from clay dust, unless the material is so damp that no dust is given off;

(f) process of loading and unloading of saggars where handling and manipulation of ground powdered flint, quartz, alumina or other materials are involved;

(g) brushing of earthenware biscuit, unless the process is carried on in a room provided with efficient general mechanical ventilation or other ventilation which is certified by the Inspector of Factories as adequate having regard to all the circumstances of the case;

(h) fettling of biscuitware which has been fixed in powdered flint or quartz except where this is done in machines so enclosed as to effectually prevent the escape of dust;

(i) where cleaning after the application of glaze is done by dipping or other process;

(j) crushing and dry grinding of materials for pottery bodies and saggars, unless carried on in machines so enclosed as to effectively prevent the escape of dust or is so damp that no dust can be given off;

(k) sieving or manipulation of powdered flint, quartz, clay grog or mixture of these materials unless it is so damp that no dust can be given off;

(l) grinding of tiles on a power driven wheel unless an efficient water spray is used on the wheel;

(m) lifting and conveying of materials by elevators and conveyers unless they are effectively enclosed and so arranged as to prevent escape of dust into the air in or near to any place in which persons are employed;

(n) preparation or weighing out of low material, lawning of dry colours, colour dusting and colour blowing;

(o) mould making unless the bins or similar receptacles used for holding plaster of paris are provided with suitable covers; and

(p) manipulation of calcined material unless the material has been made and remains so wet that no dust is given off.

4. *Separation of processes.*— Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another, and from other wet processes:—

(a) crushing and dry grinding or sieving of materials, fettling, pressing of tiles, drying of clay and greenware, loading and unloading of saggars; and

(b) all processes involving the use of a dry lead compound.

5. *Prohibition on use of glaze.*— No glaze which is not a leadless glaze or a low solubility glaze shall be used in a factory in which pottery is manufactured.

6. *Prohibition relating to women and young persons.*— No women or young person below 18 years shall be employed or permitted to work in any of the operations specified in paragraph 4, or at any place where such operations are carried on.

7. *Provision of screen to potter's wheel.*— The potter's wheel (Jolly and Jigger) shall be provided with screens or so constructed as to prevent clay scrapings being thrown off beyond the wheel.

8. *Control of dust during cleaning.*— (i) All practical measures shall be taken by damping or otherwise to prevent dust arising during cleaning of floors.

(2) Damp saw-dust or other suitable materials shall be used to render the moist method effective in preventing dust rising into the air during the cleaning process which shall be carried out after work has ceased.

9. *Floor of certain workrooms.*— The floors of potter's shops slip houses, dipping houses and ware cleaning rooms shall be hard, smooth and impervious and shall be thoroughly cleaned daily by an adult male using a moist method.

10. *Protective equipment.*— (1) The occupier shall provide and maintain suitable overalls and head coverings for all persons employed in process included under paragraph 3.

(2) The occupier shall provide and maintain suitable aprons of a waterproof or similar material, which can be sponged daily for the use of the dippers, dippers assistants, throwers, jolly workers, casters mould makers and filter press and plug mill workers.

(3) Aprons provided in pursuance of paragraph 10(2) shall be thoroughly cleaned daily by the wearers by sponging or other wet process. All overalls and head coverings shall be washed, cleaned and mended at least once a week, and this washing, cleaning or mending shall be provided for by the occupier.

(4) No person shall be allowed to work in emptying sacks of dusty materials, weighing out and mixing of dusty materials and charging of ball mills and plungs without wearing a suitable and efficient dust respirator.

11. *Washing facilities.*— (1) The occupier shall provide and maintain, in a clean state and in good

repair for the use of all persons employed in any of the processes specified in paragraph 3—

(a) a wash place under cover with either—

(i) a trough with smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60 centimetres for every five such persons employed at any one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimetres; or

(ii) at least one tap or stand pipe for every five such persons employed at any one time, and having a constant supply of clean water, the tap or stand pipe being spaced not less than 120 centimetres apart; and

(b) a sufficient supply of clean towels made of suitable material changed daily, with sufficient supply of nail brushes and soap.

12. *Time allowed for washing.*— Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing to each person employed in any of the processes mentioned in paragraph 3.

13. *Messroom.*— There shall be provided and maintained for use of all persons remaining within the premises during the rest intervals, a suitable messroom providing accommodation of 0.93 square metres per head and furnished with—

(a) a sufficient number of tablets and chairs or benches with back rest;

(b) arrangements for washing utensils;

(c) adequate means for warming food; and

(d) adequate quantity of drinking water.

(2) The room shall be adequately ventilated by the circulation of fresh air and placed under the charge of a responsible person and shall be kept clean.

14. *Food, drinks, etc. prohibited in workrooms.*— No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any workroom in which any of the processes mentioned in paragraph 3 are carried on and no person shall remain in any such room during intervals for meals and rest.

15. *Cloakroom, etc.*— There shall be provided and maintained for the use of all persons employed in any of the processes mentioned in paragraph 3—

(a) a cloakroom for clothing put off during working hours and such accommodation shall be separate from any messroom; and

(b) separate and suitable arrangements for the storage of protective equipment provided under paragraph 10.

16. *Medical examination.*— (1) All persons employed in any process included under paragraph 3 shall be examined by the Certifying Surgeon within 7 days preceding or following the date of their first employment in such process; thereafter all persons employed in any process included under sub-para-

graphs 3(i) and (xiv) shall be examined by the Certifying Surgeon once in every three calendar months, and those employed in any process included in subparagraphs (ii) to (xiii) (xv) and (xvi) of paragraph 3 once in every 12 months by the Certifying Surgeon. Records of such examinations shall be entered by the Certifying Surgeon in the health register and certificate of fitness granted to him under paragraph 17.

(2) If at any time the Certifying Surgeon is of opinion that any person employed in any process included in paragraph 3 is no longer fit for employment on the ground that continuance therein would involve danger to his health, he shall cancel the certificate of fitness granted to that person.

(3) No person whose certificate of fitness has been cancelled shall be re-employed unless the Certifying Surgeon after re-examination, again certifies him to be fit for employment.

17. *Certificate of fitness.*—A person medically examined under paragraph 16 and found fit for employment shall be granted by the Certifying Surgeon a certificate of fitness in Form 28 and such certificate shall be in the custody of the manager of the factory. The certificate shall be kept readily available for inspection by any Inspector and the person granted such a certificate shall carry with him while at work a token giving reference to such certificate.

18. *Exemption.*—If in respect of any factory the Chief Inspector of Factories is satisfied that all or any of the provisions of this Schedule are not necessary for the protection of the persons employed in such factory, he may by a certificate in writing exempt such factory from all or any of such provisions, subject to such conditions as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector without assigning any reasons.

## SCHEDULE XII

### Chemical works

1. *Application.*—This Schedule shall apply to all manufactures and processes incidental thereto carried on in chemical works.

2. *Definitions.*—For the purposes of this Schedule—

(a) “chemical works” means any factory or such parts of any factory as are named in appendix A to this Schedule;

(b) “breathing apparatus” means (i) a helmet or facepiece with necessary connections by means of which a person using it in a poisonous, asphyxiating or irritant atmosphere breathes ordinary air, or (ii) any other suitable apparatus approved in writing by the Chief Inspector;

(c) “lifebelt” means a belt made of leather or other suitable material which can be securely fastened round the body, with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man;

(d) “efficient exhaust draught” means localised ventilation effected by mechanical or other

means for the removal of gas, vapour, fume or dust to prevent it from escaping into the air of any place in which work is carried on;

(e) “suspension” means suspension by written certificate in the health register, signed by the surgeon, from employment in any process mentioned in the certificate;

(f) “bleaching powder” means the bleaching powder commonly called chloride of lime;

(g) “chlorate” means chlorate or perchlorate;

(h) “caustic” means hydroxide of potassium or sodium;

(i) “caustic pot” means a metal pot fixed over a furnace or flue and surrounded by brickwork, such as is commonly used for concentrating caustic liquor, whether such pot be used for concentrating or boiling caustic or other liquor;

(j) “chrome process” means the manufacture of chromate or bichromate of potassium or sodium, or the manipulation, movement or other treatment of these substances in connection with their manufacture; and

(k) “nitro or amido process” means the manufacture of nitro or amido derivatives of phenol and of benzene or its homologues, and the making of explosives with the use of any of these substances.

## PART I

### Applying to all the workers in Appendix A

#### A—GENERAL

3. *Housekeeping.*—(1) Every part of the pathways, works, machinery and plant shall be maintained in a clean and tidy condition.

(2) Any spillage of materials shall be cleaned up without delay.

(3) Floors, platforms, stairways, passages and gangways shall be kept free of temporary obstructions.

(4) There shall be provided easy means of access to all parts of the plant to facilitate cleaning, proper maintenance and repairs thereof.

4. *Improper use of chemicals.*—(1) No chemicals or solvents shall be used by workers for any purposes apart from the processes for which they are supplied.

(2) Workers shall be instructed on the possible dangers arising from such misuse. These instructions shall further be displayed in bold letters in prominent places in the different sections.

5. *Storage of food.*—No food, drink, tobacco, pan or similar article shall be stored or consumed on or near any part of the plant.

6. *Testing of materials.*—Workers shall be instructed on the possible dangers arising from the testing of materials, or of the use for drinking purposes of any vessel used in or in connection with, the manufacture of chemicals. These instructions shall further be displayed in bold letters in prominent places in the different sections of the factory or plant.

7. *Process hazards.* — (1) Before commencing any large scale experimental work, or any new manufacture, all possible steps shall be taken to ascertain definitely all the hazards involved both from the actual operations and the chemical reactions thereunder. The properties of the raw materials used, the final products to be made, and any by-products arising during manufacture, shall be carefully studied and provisions shall be made for dealing with any hazards including effects on workers, which may arise during manufacture. Where necessary, advice shall be obtained from the Chief Inspector on measures to be taken in this regard.

(2) Information in writing giving details of the process, its hazards and the steps taken or proposed to be taken for the safety of workers as in (1) above shall be sent to the Chief Inspector before commencing manufacture, handling or storage of any of the items covered under Appendix A, whether on experimental, pilot plant or large scale basis.

(3) The design of the buildings and plant shall be based on the information as obtained as in (1) above.

8. *Unauthorised personnel.* — (1) Unauthorised persons shall not be permitted to enter any section of the factory or plant where there are special dangers.

(2) Visitors shall be provided, where necessary, with suitable safety equipment and shall be accompanied round dangerous plant by a responsible official.

9. *Instruments.* — All instruments such as pressure gauges, thermometers, flow meters and weighing machines shall be tested at regular intervals by a competent person and records of these tests shall be kept in a register.

10. *Cocks and valves.* — Suitable valves shall be provided in all service lines at sufficiently short intervals for convenience in blanking off, etc. All cocks and valves shall be operated at least once a month and tested periodically by a competent person, and records of these tests shall be kept in a register. A plan of all service installations shall be kept readily available for perusal.

11. *Manholes.* — No manhole shall be opened for entry until effective fencing has been erected around it.

12. *Emergency instructions.* — Simple and special instructions shall be framed to ensure that effective measures will be carried out in cases of emergency, to deal with escape of inflammable, poisonous or deleterious gases, vapours, liquids or dusts. These instructions shall further be displayed in bold letters in prominent places in the different sections. All workers shall be trained and instructed as to what action to be taken in such emergencies, and to avoid general hazards of their employment.

13. *Protection of reaction mixtures.* — Suitable arrangements shall be made to ensure that no foreign matter of any sort can fall into reaction mixtures.

14. *Electrical apparatus.* — Electrical plant, fittings and conductors shall, if exposed to a damp or

corrosive atmosphere, be adequately protected. Periodic tests shall be carried out on all circuits.

15. *Place of work.* — (1) Workers shall only be allowed in those places in which they have been given orders to work.

(2) In dangerous sections of a factory, the number of workers shall be kept to a minimum compatible with the need of the process.

16. *Packing, storage and transport of chemicals.* — Chemicals shall be packed and stored in containers, suitable for the purpose and of adequate strength for storage or transport. All such containers shall be suitably labelled so that they will be stored and transported in such a manner as to ensure that, in the event of spillage, they will neither produce a reacting mixture, nor cause the development of toxic or fire risks in contact with other products in its vicinity, or with walls, floors or dust thereon.

#### B — FIRE EXPLOSION RISKS

17. *Requirement regarding location of site, buildings, etc.* — (1) Buildings and plant shall be sited with due regard to the dangers which may arise from the processes involved and in particular shall be spaced at distances which are deemed safe from the fire and explosive risks connected with the processes in adjacent buildings. Due consideration shall be given to the effect of any processes carried out in adjacent factories.

(2) Where special dangers exist, separate buildings shall be used for the different parts of a process. They shall be spaced at sufficient distances apart and shielded to prevent damage to each other in the event of fire or explosion, and shall be safeguarded by the provision of suitable blow-out panels or roofs. Where the risk of fire or explosion is considerable, the building shall be divided by blast or protective screen walls.

(3) No combustible materials shall be used in the erection of working buildings, unless there are special reasons necessitating their use, when they shall be rendered fire-resistant. The roof shall be of light fire-resistant construction and floors shall be of impervious fire-resistant material and shall be regularly maintained in such condition.

18. *Dangers of ignition (including lighting installations).* — (1) No internal combustion engine and no electric motor or other electrical equipment, and fittings and fixtures capable of generating sparks or otherwise causing combustion shall be installed or used in a building or danger zone. Electrical conductors shall be fitted with screwed steel conduits.

(2) All hot exhaust pipes shall be installed outside a building and other hot pipes shall be suitably protected.

(3) Portable electric hand lamps shall not be used unless of an intrinsically safe type, and portable electric tools connected by flexible wires shall not be used, unless of the flame-proof type.

(4) Where an inflammable atmosphere may occur, the soles of footwear worn by workers shall have no metal on them and the wheels of trucks or conveyors shall be of conducting, non-sparking materials. Adequate precautions shall be taken to pre-



vent the ignition of explosive or inflammable substances by sparks emitted from locomotives or other vehicles operated in the factory on public lines.

(5) No electric arc lamp, or naked light, fixed or portable shall be used, and no person shall have in his possession any match or any apparatus of any kind for producing a naked light or spark in or on, or about any part of the factory where there is liability to fire or explosion from inflammable gas, vapour or dust, and all incandescent electric lights in such parts shall be in double air tight covers.

(6) Prominent notices in the language understood by the majority of the workers and that can be read by day and by night, prohibiting smoking, the use of naked lights, and the carrying of matches or any apparatus of any kind for producing a naked light or spark, shall be affixed at the entrance of every room or place, where there is risk of fire or explosion from inflammable gas, vapour or dust. In the case of illiterate workers the contents of the notices shall be fully and carefully explained to them when they commence work in the factory for the first time and again when they have completed one week at the factory.

(7) A sufficient supply of spades, scrapers and pails made from non-sparking material shall be provided for the use of persons employed in cleaning out or removing residues from any chamber, still, tank or other vessel where an inflammable or explosive danger may occur.

(Note:—The risk is not always obvious and may arise, for example, through the production of hydrogen in acid tanks.)

19. *Static electricity.*—(1) All machinery and plant, particularly, pipe lines and belt drives, on which static electricity is likely to accumulate, shall be effectively earthed. Receptacles for inflammable liquids shall have metallic connections to the earthed supply tanks to prevent static sparking. Where necessary, humidity shall be controlled.

(2) Mobile tank wagons shall be earthed during filling and discharge, and precautions shall be taken to ensure that earthing is effective before such filling or discharge takes place.

20. *Lightning protection.*—Lightning protection apparatus shall be fitted where necessary, and shall be maintained in good condition.

21. *Process heating.*—The method of providing heat for a process shall be as safe as possible and where the use of naked flame is necessary, the plant shall be so constructed as to prevent any escaping of inflammable gas, vapour or dust coming into contact with the flame or exhaust gases or other agency likely to cause ignition. So far as practicable, the heating medium shall be automatically controlled at a predetermined temperature below the danger temperature.

22. *Escape of materials.*—(1) Provision shall be made in all plants, sewers, drains, flues, ducts, culverts and buried pipes to prevent the escape and spread of any liquid, gas, vapour, fume or dust likely to give rise to fire or explosion, both during normal working hours and in the event of accident or emergency.

(2) If escape occurs, such substances shall be removed expeditiously and efficiently at the point of liberation. The effluent shall be trapped and tendered safe outside the danger area.

23. *Leakage of inflammable liquids.*—(1) Provision shall be made to confine by means of bund walls, sumps, etc. all possible leakages from vessels containing inflammable liquids.

(2) Adequate and suitable fixed fire-fighting appliances shall be installed in the vicinity of such vessels.

24. *Cleaning of empty containers, etc.*—(1) All empty containers which have held inflammable liquids, and metal containers which have held sulphuric acid shall be rendered permanently safe as soon as practicable, and shall not be repaired or destroyed until such cleaning has been completed.

(2) Combustible and inflammable materials shall not be stored in close proximity to chemicals which are liable to cause ignition.

(3) Rubbish shall be removed from buildings without delay and placed in special metal containers provided with close fitting lids. The contents shall be removed daily and suitably dealt with. Waste products containing inflammable or explosive materials shall not be placed on rubbish heaps but shall be destroyed in an appropriate manner.

25. *Installing of pipe lines for inflammable liquids.*—All pipe lines for the transport of inflammable liquids shall be protected from breakage, shall be arranged so that there is no risk of mechanical damage from vehicles and shall be so laid that they drain throughout without the collection of deposits at any part. All flanged joints, bends and other connections shall be regularly inspected. Cocks and valves shall be so constructed that explosive residues cannot collect therein. The open and closed positions of all cocks and valves shall be clearly indicated on the outside.

26. *Packing of reaction vessels.*—Packing and joint materials for reaction vessels (including covers, manhole covers, and exhaust pipes) and pipe lines and also the high or low temperature insulating materials shall not contain such materials which are combustible or which react with the products of the plant.

27. *Safety valves.*—Every still and every closed vessel in which gas is evolved or into which gas is passed, and in which the pressure is liable to rise to a dangerous degree, shall have attached to it a pressure gauge, and a proper safety valve or other equally efficient means to relieve the pressure and it shall be maintained in good condition. Nothing in this paragraph shall apply to metal bottles or cylinders used for the transport of compressed gases.

28. *Vigorous or delayed reactions.*—Suitable provision, such as automatic and distant control shall be made for controlling the effects of unduly vigorous or delayed reactions. Automatic flooding or blanketing shall be provided in the event of an accident.

29. *Examination, testing and repair of plant.*—Examination, testing and repair of plant parts



which have been in contact with explosive and inflammable material, or which is under pressure, shall only be carried out under proper supervision.

30. *Alarm systems.* — (1) Gravity or pressure feed systems for supplying inflammable materials to the various parts of the buildings or plant shall be fitted with alarm systems, automatic cutoffs or other devices to prevent over-charging or otherwise endangering of the plant.

(2) The amount of inflammable material taken into a building in bulk containers at any one time shall be kept as low as practicable.

(3) Adequate steps shall be taken to prevent the escape of inflammable and explosive vapours from any container into the atmosphere of any building.

#### C — GAS, VAPOUR, FUME OR DUST RISKS

31. *Escape of gases, etc.* — Effective steps shall be taken to prevent the escape of dangerous gases, vapours, fumes or dust from any part of the plant, by the total enclosure of the process involved in air tight chamber or by the provision of efficient exhaust draught. Effective arrangements shall be made to ensure that in the event of failure of the control measure provided as above the process shall stop immediately and the dangerous gases, vapours, fumes or dust which have escaped are trapped and rendered safe.

32. *Danger due to effluents.* — (1) Adequate precautions shall be taken to prevent the mixing of effluents which may cause dangerous or poisonous gases to be evolved.

(2) Effluents which may contain or give rise in the presence of other effluents, to such gases shall be provided with independent drainage systems to ensure that they may be trapped and rendered safe.

33. *Staging.* — (1) Staging shall not be erected over any open vessel unless the vessel is so constructed and ventilated to prevent the emission of vapours of fumes about such staging.

(2) Where such staging is provided to give access to higher levels in large plants, effective means shall be provided at all levels with direct means of access to the outside of the room or building and thence to ground level.

(3) Such staging shall be fitted with suitable handrails and toeboards and the floors and staging shall be impervious and easily cleaned.

34. *Instructions as regards risk.* — Before commencing work, every worker shall be fully instructed about the properties of the materials they have to handle, and of the dangers arising from any gas, fume, vapour or dust which may be evolved during the process. Workers shall also be instructed of the measures to be adopted to deal with such an escape of dangerous gas, fume, vapour or dust in the event of emergency.

35. *Breathing apparatus.* — (1) There shall be provided in every factory where dangerous gas or fume is liable to escape a sufficient supply of —

(a) breathing apparatus of an approved make for the hazards involved;

(b) oxygen and suitable means of its administration; and

(c) life-belts.

(2) The breathing apparatus and other appliances required by this paragraph shall

(a) be maintained in good order and kept in an ambulance room or in some other place approved in writing by the Chief Inspector; and

(b) be thoroughly inspected once every month by a competent person appointed in writing by the occupier, and a record of their condition shall be entered in a book provided for that purpose, which shall be produced when required by an Inspector.

(3) Workers shall be trained and given a periodic refresher course, in the use of breathing apparatus and respirators.

(4) Respirators shall be kept properly labelled in clean dry lightproof cabinets, and if liable to be affected by fumes, shall be protected by suitable containers. Respirators shall be dried and cleaned after use and shall be periodically disinfected.

36. *Treatment of persons.* — In every room or place so specified in writing by the Chief Inspector, there shall be affixed the official cautionary notice regarding dangerous gases and burns. Such notices shall be legible by day and by night and shall be printed in the language understood by the majority of the workers.

37. *Personal protective equipment.* — (1) Suitable protective clothing shall be provided for the use of operators —

(a) When operating on valves or cocks controlling fluids which by their nature, pressure or temperature would be highly dangerous if a blow-out were to occur or when cleaning chokes in systems containing such fluids, if pressure is likely to exist behind the chokes;

(b) When there is danger of injury by absorption of corrosive substance through skin during the performance of normal duties or in the event of emergency;

(c) Whenever there is risk of injury in handling corrosive substances, hot or cold articles, and sharp or rough objects; and

(d) When there is risk of poisonous materials being carried away on the clothes of operators.

(2) There shall be provided for the use of all persons employed in the processes specified in appendix B an adequate supply of suitable protective equipment including gloves, overalls and protective footwear and of goggles and respirators. Respirators shall be of a type approved in writing by the Chief Inspector.

(3) Protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.

(4) Arrangements shall be made for the proper and efficient cleaning of all such protective equipment.

38. *Cloakrooms.*— There shall be provided and maintained for the use of all persons employed in the processes specified in appendix B, a suitable cloakroom for clothing put off during work hours and a suitable place separate from the cloakroom, for the storage of overalls or working clothes. The accommodation so provided shall be placed in the charge of a responsible person, and shall be kept clean.

39. *Special bathing facilities.*— (1) There shall be provided for the use of all persons employed in the processes specified in the appendix C, separate sanitary conveniences and sufficient and suitable bathing facilities, as approved by the Chief Inspector.

(2) A bath register shall be kept containing the names of all persons employed in these processes and an entry of the date on which each person takes a bath.

40. *Entry into vessels.*— (1) Before any person enters, for any purpose except that of rescue, an absorber, boiler culvert, drain, flue, gas purifier, sewer, still, tank, tower, vitriol chamber or other place where there is reason to apprehend the presence of dangerous gas or fumes, a responsible person appointed in writing by the occupier for this purpose, shall personally examine such place and shall certify in writing in a book kept for the purpose either that such place is isolated from every source of such gas or fume and is free from danger, or that it is not so isolated and sealed and free from danger. No person shall enter any such place which is certified not to be so isolated and sealed and free from danger unless he is wearing a breathing apparatus, and (where there are no cross stays or obstructions likely to cause entanglement) a life-belt, the free end of the rope attached to which shall be left with a man outside whose sole duty shall be to keep watch and to draw out wearer if he appears to be affected by gas or fume. The belt and rope shall be so adjusted and worn that the wearer can be drawn up head foremost through any man-hole or opening.

(2) A person entering for the purpose of rescue into any such place for which a clearance certificate has not been issued shall wear a breathing apparatus and a life-belt in the manner specified in subparagraph (1) above.

41. *Examination and repair of plant.*— Where poisonous materials are likely to be present the examination and repair of plant and piping shall only be done under the supervision of a competent person, and after the plant and piping has been thoroughly cleaned and ventilated. When opening vessels and breaking joints in pipe lines, respirators, goggles and protective clothing shall be worn to the extent required by the competent person.

42. *Storage of acid carboys.*— Carboys containing nitric acid or "mixed" acid shall be stored in open-sided sheds detached from other buildings, and placed on a flooring of sandstone, brick or other suitable inorganic materials. A passage way shall be provided and kept free from obstruction between every four rows of such carboys. An ample supply of water shall be available for washing away spilt acid and all precautions shall be taken to prevent workers being exposed to fumes.

#### D—RISKS OF CORROSIVE OR DELETERIOUS SUBSTANCES

43. *Buildings.*— All buildings and plant shall be sited with due regard to possible dangers from accidental liberation or splashing of corrosive and deleterious liquids, and shall be so designed as to facilitate thorough washing and cleaning. The construction of staging and other parts of buildings shall be carried out with materials impervious and resistant to corrosion so far as practicable.

44. *Leakage.*— (1) All plants shall be so designed and constructed as to obviate the escape of corrosive liquid. Where necessary, separate buildings, rooms or protective structures shall be used for the dangerous stages of the process and the buildings shall be so designed as to localise any escape of liquid.

(2) Catch pits, bund walls or other suitable precautions shall be provided to restrict the serious effects of such leakages. Catch pits shall be placed below joints in pipelines to prevent danger to workers from such leakage.

(3) Passages and work stations shall not be situated directly below any part of plant where there is risk of escape of dangerous liquid. Access to such parts shall, so far as practicable, be prohibited, and danger notices shall be affixed at suitable points.

45. *Precautions against escape.*— Adequate precautions shall be taken to prevent the escape of corrosive or deleterious substances and means shall be provided for rendering safe any such escaped corrosive or deleterious substances.

46. *Drainage.*— Adequate drainage shall be provided and shall lead to special treatment tanks where deleterious materials shall be neutralised or otherwise rendered safe before it is discharged into ordinary drains or sewers.

47. *Covering of vessels.*— (1) Every fixed vessel or structure containing any dangerous material, and not so covered as to eliminate all reasonable risk of accidental immersion in it of any portion of the body of a worker, shall be so constructed that there is no foothold on the top or the sides.

(2) Such vessel shall, unless its edge is at least 90 centimetres above the adjoining ground or platform, be securely fenced to a height of at least 90 centimetres above such adjoining ground or platform.

(3) No plank or gangway shall be placed across or inside any such vessel, unless such plank or gangway is at least 45 centimetres wide, and is securely fenced on both sides by rails spaced at 22.5 centimetres apart to a height of at least 90 centimetres or by other equally efficient means.

(4) Where such vessels adjoin and the space between them, clear of any surrounding brick or other work is either less than 45 centimetres in width or is 45 or more centimetres in width, but is not securely fenced on both sides to a height of at least 90 centimetres, secure barriers shall be so placed as to prevent passage between them:

Provided that sub-paragraph (2) of this paragraph shall not apply to —

(a) saturators used in the manufacture of sulphate of ammonia; and

(b) that part of the sides of brine evaporating pans which require raking, drawing or filling.

48. *Ventilation.* — Adequate ventilation shall be provided and maintained at all times in rooms or buildings where dangerous gas, vapour, fume or dust may be evolved.

49. *Means of escape.* — Adequate means of escape from rooms or buildings in the event of a leakage of corrosive liquid shall be provided and maintained.

50. *Treatment of personnel.* — (1) In all places where strong acid or any other dangerous corrosive liquids are used, there shall be provided for use in an emergency —

(a) adequate and readily accessible means of drenching with cold water the persons and the clothing of persons, who have been splashed with such liquid;

(b) adequate special arrangements to deal with any person who has been splashed with poisonous material that can be absorbed through the skin; and

(c) a sufficient number of eye-wash bottles, filled with distilled water or other suitable liquid, kept in boxes or cupboard conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.

(2) Except where the manipulation of such corrosive liquids is carried on as to prevent risk of personal injury from splashing or otherwise, there shall be provided for those who have to manipulate such liquid sufficient and suitable goggles and gloves or other suitable protection for the eyes and hands. If gloves are provided they shall be collected, examined, and cleansed at the close of the day's work and shall be repaired or renewed when necessary.

51. *Maintenance.* — (1) Before any examination or repairs are carried out on plant or pipe lines, a competent person shall issue a clearance certificate permitting such examination or repairs.

(2) Adequate precautions shall be taken to liberate any pockets of gas or liquid which may have been formed in pipe lines, and which may cause corrosive spray at the point where dismantling takes place.

52. *Washing facilities.* — (1) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in a clean and orderly condition.

(2) If female workers are employed separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass. The entrance to such facilities shall bear cons-

picious notice "For Women Only" in the language understood by the majority of the workers and shall also be indicated pictorially.

53. *Messroom facilities.* — In every factory there shall be provided and maintained for the use of those remaining on the premises during the rest intervals, suitable and adequate messroom or canteen accommodation which shall be furnished with sufficient tables and chairs or benches with back rest and where sufficient drinking water is available.

54. *Ambulance room.* — (1) In every factory in which more than 250 persons are employed on the processes to which this Schedule applies, there shall be provided and maintained in good order an ambulance room.

(2) The ambulance room shall be a separate room used only for the purpose of treatment and rest. It shall have a floor space of not less than 9 square metres and smooth, hard and impervious walls and floor, and shall be provided with ample means of natural and artificial lighting. It shall contain all the items shown in appendix D.

(3) Where persons of both sexes are employed, arrangement shall be made at the ambulance room for their separate treatment.

(4) The ambulance room shall be placed under the charge of a qualified nurse or other person trained in first-aid, who shall always be readily available during working hours, and shall keep a record of all cases of accidents or sickness treated in the room.

55. *Ambulance van.* — In every factory there shall be provided and maintained in good condition a suitably constructed ambulance van for the purpose or removal of serious cases of accident or sickness, unless arrangements have been made with a hospital or other place in telephonic communication with the factory for obtaining such a carriage immediately when required.

56. *Medical personnel.* — There shall be a whole-time medical officer in every factory employing 250 persons or more.

57. *Medical examination.* — (1) Workers engaged in the manufacture, processing, formulation or use of the following shall be examined once in every three months by the Certifying Surgeon and records maintained: —

- (a) hexaethyl tetraphosphate;
- (b) tetra ethyl pyrophosphate;
- (c) O, o-diethyl o-p-nitrophenyl thiophosphate (Perathion);
- (d) nitotine and nicotine sulphate;
- (e) mercury derivatives;
- (f) methyl bromide;
- (g) cyanides;
- (h) arsenical derivatives;
- (i) chrome process compounds; and
- (j) nitro or amido process compounds.

(2) A health register containing the names of all persons employed in the process shall be kept in a form approved by the Chief Inspector.

(3) No new person shall be employed for more than 14 days without a certificate of fitness granted after examination by the Certifying Surgeon, who shall make an entry duly signed in the health register.

(4) Every person so employed shall present himself at the appointed time for examination by the Certifying Surgeon as provided in sub-paragraph (3).

(5) The Certifying Surgeon shall have the power to suspend any person employed if he has reason to believe that continuance of such person in such employment shall be dangerous to his health and no person after such suspension shall be employed without written sanction from the Certifying Surgeon and entry to that effect in the health register.

58. *Duties of workers.* — (1) Every person employed shall —

(a) report to his foreman any defect in any fencing, breathing apparatus, appliance or other requisite provided in pursuance of this Schedule, as soon as he becomes aware of such defect;

(b) use the articles, appliances or accommodation required by this Schedule for the purpose for which they are provided;

(c) wear the breathing apparatus and life-belt as required under paragraph 40.

(2) Every person employed —

(a) in a process to which paragraph 37 applies shall wear the protective clothing, footwear, respirators, goggles or gloves provided under paragraph 37 and shall deposit overalls or suits or working clothing so provided, as well as clothing put off during working hours, in the places provided under paragraph 38;

(b) in processes to which paragraph 39 applies, shall carefully wash the hands and face before partaking of any food or leaving the premises; and

(c) in any processes to which Part II of this Schedule applies, shall use the protective appliances supplied in respect of any process in which he is engaged.

(3) No person shall —

(a) remove any fencing provided in pursuance of paragraph 47 unless duly authorised;

(b) stand on the edge or on the side of any vessel to which paragraph 47 applies;

(c) pass or attempt to pass any barrier erected in pursuance of paragraph 47;

(d) place across or inside any vessel to which paragraph 47 applies, any plank or gangway which does not comply with that paragraph or make use of any such plank or gangway while in such position;

(e) take a naked light or any lamp or matches or any apparatus for producing a naked light or spark into, or smoke in, any part of the works where there is liability to explosion from inflammable gas, vapour or dust;

(f) use a metal spade, scraper or pail when cleaning out or removing the residues from any

chamber, still, tank or other vessel which has contained sulphuric acid or hydrochloric acid or other substance which may cause evolution of arseniuretted hydrogen; and

(g) remove from a first-aid box or cupboard or from the ambulance room any first-aid appliance or dressing except for the treatment of injured workers in the premises.

59. *Exemption.* — If the Chief Inspector is satisfied in respect of any factory or any process that, owing to the special conditions or special methods of work, or by reason of the infrequency of the process or for other reasons, all or any of the requirements of this Schedule are not necessary for the protection of persons employed in any factory or process, he may by order in writing (which he may in his discretion revoke) exempt any factory or process from all or any of the provisions of this Schedule, subject to such conditions as he may by such order prescribe.

## PART II

### Applying to the works in Appendix E

60. *Entry into gas tar or coal tar still.* — Before any person enters a gas tar or coal tar still for any purpose except that of rescue, it shall be completely isolated from adjoining tar stills by disconnecting either —

(a) the pipe leading from the swan neck to the condenser work; or

(b) the waste gas pipe fixed to the worn-end or receiver; and

in addition, blank flanges shall be inserted between the disconnected parts and the fitch discharge pipe or cock at the bottom of the still shall be disconnected.

61. *Entry into bleaching power chambers.* — (1) No person shall enter a chamber for the purpose of withdrawing the charge of bleaching powder unless and until —

(a) the chamber is efficiently ventilated; and

(b) the air in the chamber has been tested and found to contain not more than 6 grammes of free chlorine gas per cubic metre.

(2) A register containing details of all such tests shall be kept in a form approved by the Chief Inspector.

62. *Special precautions for nitro and amido processes.* — In a nitro or amido process —

(a) if crystallised substances are broken or any liquor agitated by hand, precautions shall be taken to prevent, as far as practicable, the escape of dust or fume into the air or any place in which any person is employed. The handles of all implements used in the operations shall be cleansed daily;

(b) cartridges shall not be filled by hand but by means of a suitable scoop;

(c) every drying stove shall be efficiently ventilated to the outside air in such a manner that hot air from the stove shall not be drawn into any workroom;

(d) no person shall enter a stove to remove the contents until a free current of air has been passed through it; and

(e) every vessel containing nitric or amido derivatives of phenol or of benzene or its homologues shall, if steam is passed into or around it, or if the temperature of the contents be at or above the temperature of boiling water, be covered in such a way that steam or vapour shall be discharged into the open air at a height of not less than 7.6 metres from the ground or the working platform, and at a point from where it cannot be blown back again into the workroom.

63. *Precautions during caustic grinding, etc.* — Every machine used for grinding or crushing caustic shall be enclosed, and where any of the following processes are carried on such as —

- (i) grinding or crushing of caustic;
- (ii) packing of ground caustic;
- (iii) grinding, sieving, evaporating or packing in a chrome process; and
- (iv) crushing, grinding or mixing of material or cartridge filling in a nitro or amido process;

an efficient exhaust draught shall be provided.

64. *Chlorate manufacture.* — (1) Chlorate shall not be crystallised, ground or packed except in a room or place not used for any other purpose, the floor of which room or place shall be of cement or other smooth, impervious and incombustible material, and shall be thoroughly cleansed daily.

(2) Wooden vessels shall not be used for the crystallisation of chlorate, or to contain crystallised or ground chlorate;

Provided that this requirement shall not prohibit the packing of chlorate for sale into wooden casks or other wooden vessels.

65. *Restrictions on the employment of young persons and women.* — (1) Persons under 18 years of age and women shall not be employed in any process in which hydrofluoric acid fumes or ammoniacal vapours are given off or in any of the following operations: —

- (a) evaporation of brine in open pans;
- (b) stoving of salt;
- (c) work at a furnace where the treatment of zinc ores is carried on; and
- (d) the cleansing of workrooms where the process mentioned in (c) is carried on.

(2) No person under 18 years of age shall be employed in a chrome process or in a nitro or amido process or in a process in which the following materials are used or where the vapour of such materials is given off namely: —

- (a) carbon bisulphide;
- (b) chlorides of sulphur;
- (c) benzene;
- (d) carbon tetrachloride;
- (e) trichloro-ethylene;
- (f) any carbon chlorine compound; and
- (g) any mixture containing any of such materials.

## APPENDIX A

Any works or that part of works in which —

(a) the manufacture or recovery of any of the following is carried on namely: —

- (i) carbonates, chromates, chlorates, oxides or hydroxides of potassium, sodium, iron, aluminium, cobalt, nickel, arsenic, antimony, zinc or magnesium;
- (ii) ammonia and the hydroxide and salts of ammonium;
- (iii) sulphurous, sulphuric, nitric, hydrochloric, hydrofluoric, hydriodic, hydrosulphuric, boric, phosphoric, oxalic, arsenious, arsenic, lactic, acetic, tartaric or citric acids and their metallic or organic salts; and

(iv) cyanogen compounds;

(b) a wet process is carried on —

- (i) for the extraction of metal from ore or from any by-product or residual material; or
- (ii) in which electrical energy is used in any process of chemical manufacture;

(c) alkali waste or the drainage therefrom is subjected to any chemical process for the recovery of sulphur, or for the utilisation of any constituent of such waste or drainage;

(d) carbon bisulphide is made or hydrogen sulphide is evolved by the decomposition of metallic sulphides or hydrogen sulphide is used in the production of such sulphides;

(e) bleaching powder is manufactured or chlorine gas is made or is used in any process of chemical manufacture;

(f) (i) gas tar or coal tar or any compound product or residue of such tars is distilled or is used in any process of chemical manufacture;

(ii) synthetic colouring matters or their intermediates are made;

(g) refining of crude shale oil or any process incidental thereto is carried out;

(h) nitro acid is used in the manufacture of nitro compounds;

(i) explosives are made with the use of nitro compounds;

(j) phosgene (carbonyl chloride) is manufactured or is used in the process of chemical manufacture; and

(k) aliphatic or aromatic compounds or their derivatives or substituted derivatives are manufactured or recovered.

## APPENDIX B

1. A nitro or amido process.
2. Grinding raw materials in a chrome process.
3. The crystal department and the packing room in a chrome process.
4. Packing in a chrome process.
5. Any room or place in which chlorate is crystallised, ground or packed.

6. Any room in which caustic is ground or crushed by machinery.
7. Bleaching powder chambers, or in packing charges drawn from such chambers.
8. Drawing off of molten sulphur from sulphur pots in the process of carbon disulphide manufacture.

#### APPENDIX C

1. A nitro or amido process.
2. The crystal department and the packing room in a chrome process.
3. The process of distilling gas or coal tar (other than blast furnace tar) and any process of chemical manufacture in which such tar is used.

#### APPENDIX D

1. A glazed sink with hot and cold water always available.
2. A table with a smooth top.
3. Means for sterilising instruments.
4. A couch.
5. A stretcher.
6. Two buckets or containers with close-fitting lids.
7. Two rubber hot water bags.
8. A kettle and spirit stove or other suitable means of boiling water.
9. Twelve plain wooden splints 900 m × 100 m × 6 m.
10. Twelve plain wooden splints 350 m × 75 m × 6 m.
11. Six plain wooden splints 250 m × 50 m × 12 m.
12. Three woollen blankets.
13. One pair artery forceps.
14. One bottle of brandy.
15. Two medium size sponges.
16. Three hand towels.
17. Two kidney trays.
18. Four carbolic soaps.
19. Two glass tumblers and two wine glasses.
20. Two clinical thermometers.
21. Graduated measuring glass with teaspoon.
22. One eye bath.
23. One bottle (900 gms.) carbolic lotion 1 in 20.
24. Two chairs.
25. One screen.
26. One electric hand torch.
27. An adequate supply of anti-tetanus serum.
28. Two first-aid boxes, each containing —
  - (a) twenty four small sterilised dressings;
  - (b) twelve medium size sterilised dressings;
  - (c) twelve large size sterilised dressings;
  - (d) twelve large size sterilised burn dressings;
  - (e) twelve half-ounce packets of sterilised cotton;
  - (f) one snake-bite lancet;
  - (g) one pair of scissors;
  - (h) two one-ounce bottles of potassium permanganate crystals;
  - (i) one four-ounce bottle containing a two per cent alcoholic solution of iodine;

- (j) one four-ounce bottle of sal volatile having the dose and mode of administration indicated on the label; and
- (k) one copy of the first-aid leaflet issued by the Directorate General Factory Advice Service and Labour Institutes (Government of India), Bombay.

#### APPENDIX E

1. Any works or that part of works in which —
  - (a) caustic pots are used;
  - (b) chlorate or bleaching powder is manufactured;
  - (c) (i) gas tar or coal tar is distilled or is used in any process of chemical manufacture;
  - (ii) a nitro or amido process is carried on;
  - (iii) a chrome process is carried on;
  - (d) crude shale oil is refined or processes incidental thereto are carried on;
  - (e) nitric acid is used in the manufacture of nitro compounds;
  - (f) the evaporation of brine in open pans and the stoving of salt are carried on; or
  - (g) the manufacture or recovery of hydrofluoric acid or any of its salts is carried on.
2. Work at a furnace where the treatment of zinc ores is carried on.

#### SCHEDULE XIII

##### Manufacture of articles from refractory materials

1. *Application and exemption.* — This Schedule shall apply to the following processes: —

(a) handling, moving, breaking, crushing, grinding or sieving of any refractory materials, containing not less than 25 per cent total silica for the purpose of manufacture —

(i) of article used in the construction of furnaces and flues;

(ii) of crucibles; and

(iii) of compositions or other materials used in the preparation of moulds in which metals are cast; or

(b) any process in the manufacture of refractory brick as hereinafter defined:

Provided that nothing in this Schedule shall apply —

(i) to handling, moving, mixing or sieving of natural sand; or

(ii) to the manipulation of rotten rock in the preparation of moulds, used in metal foundries:

Provided further that if the Chief Inspector of Factories is satisfied in respect of any factory or part thereof that owing to the special conditions of work or otherwise, that any of the requirements of this Schedule can be suspended or relaxed without any danger to the health of the person employed therein, he may by an order in writing grant such suspension or relaxation for such period and on such conditions as he may think fit. Any such order may be revoked at any time.



2. *Definitions.* — For the purposes of this Schedule —

(a) "refractory material" means any refractory material containing not less than 25 per cent total silica;

(b) "refractory brick" means any brick or article composed of refractory material and containing not less than 25 per cent total silica; and

(c) "efficient exhaust draught" means localised ventilation by mechanical means for the removal of dust so as to prevent dust from escaping into the air of any place in which work is carried on. No draught shall be deemed to be efficient which fails to remove the dust produced at the point where such dust originates.

3. *Refractory material not to be broken.* — No refractory material shall be broken in pieces by manual labour unless the process is carried out in the open air:

Provided that where it is not practicable to carry out this process in open air, the process shall be carried out under an efficient exhaust draught.

4. *Crushing or grinding of refractory material.* — No refractory material, unless it is so wet that dust will not be produced, shall be crushed or ground in a stone crushing or grinding machine unless such machine is provided with —

(a) an efficient exhaust draught and efficient dust collecting appliances; or

(b) an efficient water or steam spray:

Provided that every grinding machine wherein any refractory material is ground in dry state, shall be, totally enclosed and connected to a mechanical exhaust system so as to prevent effectively any escape of dust outside the casing of the machine by maintaining a pressure below the atmospheric pressure within the casing of the machine:

Provided further that all processes of crushing and grinding shall be effectively isolated from other processes.

5. *Refractory material handling equipment to be enclosed.* — All chutes, conveyors, elevators, screens, sieves and mixers used for manipulating refractory material shall, unless the material is so wet that dust will not be produced, be enclosed and be provided with an efficient exhaust draught.

6. *Precautions in handling refractory material.* — No refractory material so dry as to produce dust shall —

(a) be loaded into any wagon or other receptacle for transport unless it has been placed in a suitable dustproof container so dampened as to preclude dust;

(b) be unloaded from any wagon or other receptacle for transport unless it has been so dampened as to preclude dust or unless the work is done under an efficient exhaust draught; or

(c) be shovelled or raked or otherwise manipulated by means of hand tools in any manu-

facturing process unless it has been so dampened as to preclude dust or unless the work is done under an efficient exhaust draught:

Provided that sub-paragraph (b) of this paragraph shall not apply to refractory material in the form of rock or pebbles before it is manipulated in any manufacturing process.

7. *Maintenance of floors.* — (1) The floors of all places where refractory bricks are dried, other than the floors of tunnel ovens or chamber driers not normally entered by persons employed shall, after each lot of refractory bricks has been removed, be carefully cleaned of all debris and the part being cleaned shall be kept damp while the cleaning is being done.

(2) There shall be provided in every such place a constant supply of water laid on under adequate pressure with sufficient connections and a flexible branch pipe and sprinkler to enable water to be supplied direct to every part of the floor.

8. *Prohibition of use of drying stove.* — No drying stove in which refractory bricks are baked by fires before being placed in the kilns, shall be used.

9. *Cleaning of floors and suppression of refractory dust.* — The surface of every floor or place where persons are liable to pass shall be cleaned of debris of refractory material once at least during each daily period of employment or where shifts are worked, once during each shift. Such debris unless it is immediately required for use in the processes, shall be effectively dampened and either be placed in covered receptacles, or be otherwise stored in such a manner as to prevent the escape of dust into the air in or near to any place where any person is employed.

10. *Suppression of refractory dust while drying.* — Where plates are used, whether portable or forming part of the floor, on which refractory bricks are dried, such plates shall be freed from adherent material only by a wet method or by such other method as will prevent the escape of dust into the air.

11. *Prohibition of use of refractory dust for moulding.* — The dust or powder of refractory materials shall not be used for sprinkling the moulds in refractory brickmaking:

Provided that nothing in this paragraph shall be deemed to prevent the use of natural sand for the purpose of sprinkling the moulds.

12. *Workers not to work in refractory dust atmosphere.* — No worker shall be allowed to work on any dust process or at any place where dust of any refractory materials is present in the atmosphere:

Provided that in an emergency a worker may be allowed to work at such process or place if he wears a suitable and efficient dust mask or breathing apparatus.

13. *Medical examination.* — (1) Every worker employed on any day of the processes specified in sub-paragraphs (a) and (b) of paragraph 1 shall be medically examined in such a manner and at such

intervals as may be specified by any rules made under the Workmen's Compensation Act, 1923 or if no such rules have been framed under the said Act, every such worker shall be medically examined by the Certifying Surgeon before employment on any of the aforesaid process and at an interval not exceeding six months thereafter.

(2) Subject to sub-paragraph (3), an X-ray examination of the chest of every worker referred to in sub-paragraph (1) shall be carried out —

(a) if he is already in employment on the date of coming into force of the sub-paragraph, within six months of such date and at an interval of every three years thereafter;

(b) if he is employed after such date within one month of the date of his employment and at an interval of every three years thereafter;

and the result of every such X-ray examination shall be produced before the Certifying Surgeon within a month of the examination.

(3) If the Certifying Surgeon, during the course of medical examination of any worker under sub-paragraph (1) has reason to suspect onset of any chest disease, he may direct the manager or the occupier to get an X-ray examination of the worker done and to produce the X-ray plate before him within a specified time and on receipt of such direction, the manager or the occupier, as the case may be, shall carry out the direction.

(4) The Certifying Surgeon shall grant to each worker examined, a certificate specifying therein whether or not the worker was considered fit to be employed on any of the aforesaid processes.

(5) The manager shall maintain a register in which the findings and recommendations of the Certifying Surgeon in respect of every worker and in respect of every medical examination shall be maintained duly signed by the Certifying Surgeon.

(6) A worker not declared fit shall not be employed on any of the aforesaid processes and he shall be employed on only such other process or he shall be subjected to such other examination or treatment as may be directed by the Certifying Surgeon.

(7) No fees shall be charged from any worker for the medical examination and it shall be the responsibility of the occupier and the manager to comply with the provisions of this Schedule.

14. *Time limit for compliance in respect of existing plants.* — In case any existing plant or machinery which needs alteration, modification or replacement or in case of any new plant to be installed, is required to comply with the requirements of this Schedule, such alteration, modification, replacement or installation of the plant or machinery shall be carried on within a period not exceeding six months from the date of publication of this Schedule:

Provided that the Chief Inspector of Factories in consideration of special and exceptional circumstances by an order in writing may extend this period to such further period as he may think fit.

#### SCHEDULE XIV

**Handling and processing of asbestos, manufacture of any article of asbestos and any other process of manufacture or otherwise in which asbestos is used in any form**

1. *Application* — This Schedule shall apply to factories in which any of the following processes are carried on: —

(a) breaking, crushing, disintegrating, opening, grinding, mixing or sieving of asbestos and any other processes involving handling and manipulation of asbestos incidental thereto;

(b) all processes in the manufacture of asbestos, textiles including preparatory and finishing processes;

(c) making of insulation slabs or sections, composed wholly or partly of asbestos, and processes incidental thereto;

(d) making or repairing of insulating mattresses, composed wholly or partly of asbestos, and processes incidental thereto;

(e) manufacture of asbestos cardboard and paper;

(f) manufacture of asbestos or cement goods;

(g) application of asbestos by spray method;

(h) sawing, grinding, turning, abrading and polishing, in the dry state, of articles composed wholly or partly of asbestos; and

(i) cleaning of any room, vessel, chambers, fixture or appliances for the collection of asbestos dust:

Provided that if the Chief Inspector is satisfied that in respect of any factory or workshop or part thereof by reason of the restricted use of asbestos or the method of working, or occasional nature of work, or otherwise, all or any of the provisions of this Schedule can be suspended or relaxed without danger to the health of the persons employed therein, he may grant suspension or relaxation in writing under such conditions as he may think fit. Any such certificate may be revoked at any time.

2. *Definitions.* — For the purposes of this Schedule —

(a) "asbestos" means any fibrous silicate mineral, and any admixture containing any such mineral, whether crude, crushed or opened;

(b) "asbestos textiles" means yarn or cloth composed of asbestos or asbestos mixed with any other material;

(c) "preparing" means crushing, disintegrating and any other process in or incidental to the opening of asbestos;

(d) "approved" means approved for the time being in writing by the Chief Inspector; and

(e) "breathing apparatus" means a helmet or face piece with necessary connection by means of which a person using it can breath air free from dust, or any other approved apparatus of like nature.

3. *Exhaust draught.*—An exhaust draught effected by mechanical means which prevents the escape of asbestos dust into the air of any room in which persons work, shall be provided and maintained for—

(a) manufacturing and conveying machinery namely:—

(i) preparing, grinding or dry mixing machines;

(ii) carding, card waste-end, ring spinning machines and looms;

(iii) machines or other plant fed with asbestos; and

(iv) machines used for the sewing, grinding, turning, abrading or polishing, in the dry estate, of articles composed wholly or partly of asbestos;

(b) cleaning, and grinding of the cylinders or other parts of a carding machine;

(c) chambers, hoppers or other structures into which loose asbestos is delivered or passed;

(d) work-benches for asbestos waste sorting or for other manipulation of asbestos by hand;

(e) workplaces at which the filling or emptying of sacks, skips or other portable containers is carried on and weighing or other process incidental thereto is effected by hand; and

(f) sack cleaning machines:

Provided that this clause shall not apply—

(i) to a machine or other plant which does not give rise to asbestos dust, or is so enclosed as to prevent escape of asbestos dust into the air of any room in which persons work; or

(ii) where the asbestos is so wet or so treated with grease or other material as to prevent the evolution of dust; or

(iii) to the making or repairing of insulating mattresses; or

(iv) to mixing or blending by hand of asbestos.

4. *Mixing or blending.*—(1) Mixing or blending by hand of asbestos shall not be carried on except with an exhaust draught effected by mechanical means so designed and maintained as to ensure as far as practicable the suppression of dust during the processes.

(2) In premises which are constructed or reconstructed after the date on which this Schedule comes into force, the mixing or blending by hand of asbestos shall not be done except in a special room or place in which no other work is ordinarily carried on.

(3)(a) The making or repairing of insulating mattresses composed wholly or partly of asbestos shall not be carried on in any room in which any other work is done.

(b) In every room in which the making or repairing of insulating mattresses is carried on—

(i) adequate exhaust and inlet ventilation in accordance with arrangements to be approved in each case shall be provided and maintained;

(ii) no person other than those engaged in filling, beating or levelling shall be present whilst such processes are being carried on and work shall not be resumed in the room after filling, beating or levelling for at least ten minutes;

(iii) the floors and benches shall be kept dampened so as to prevent dust arising therefrom effectively; and

(iv) the covers shall be effectively dampened immediately after being cut out and in the case of fibre filled mattresses, shall be kept damp whilst filling, beating or levelling is being carried on.

(4)(a) Storage chambers or bins for loose asbestos shall, in the case of premises constructed or reconstructed after the date on which this Schedule comes into force, be effectively separated from any workroom and, in the case of other premises be effectively separated from any workroom in which the asbestos is not required for the purposes carried on in the room.

(b) Chambers or apparatus for dust settling and filtering shall not be allowed in any workroom.

(c) Arrangements shall be made to prevent asbestos dust discharged from exhaust apparatus being drawn into the air of any workroom.

(5) All machinery used in preparing, grinding or asbestos carding, card roller cleaning and grinding, and sack cleaning and all card waste-end machines, lattices, elevators, chutes and conveyors shall be so constructed and maintained that dust or debris containing asbestos cannot escape from any part thereof, other than dust removed by air exhaust draught provided in accordance with paragraph 3 of the Schedule.

(6)(a) Cleaning by hand of the cylinders (including the doffer cylinders) of a carding machine, shall not be done whilst any person other than those performing or assisting at the cleaning is present.

(b) After six months from the date on which this Schedule comes into force, such cleaning as aforesaid shall not be done by means of hand strickles or other hand tools:

Provided that the Inspector or the Chief Inspector may direct such other measures and precautions to be taken as may be considered necessary for safeguarding the health of the workers employed on processes and work specified in paragraph 4.

5. *Maintenance of floors and work places.*—(1) In every room in which any of the requirements of this Schedule apply—

(a) the floors, work-benches and plant shall be kept in a clean state and free from asbestos debris and suitable arrangements shall be made for the storage of asbestos not immediately required for use; and

(b) the floors shall be kept free from any materials, plant or other articles not immediately required for the work carried on in the room which would obstruct the proper cleaning of the floor.

(2) Every room as aforesaid shall be adequately lighted.

6. *Asbestos sack not to be cleaned by hand.* — (1) A sack which has contained asbestos shall not be cleaned by hand beating but by a machine, complying with paragraph 3 and sub-paragraph (5) of paragraph 4.

(2) All sacks used as containers for the purpose of transport of asbestos within the factory shall be constructed of impermeable material and shall be kept in good repair.

7. *Testing of ventilating plant.* — (1) All ventilating plant used for the purpose of extracting or suppressing dust as required by this Schedule shall at least once in every six months be thoroughly examined and tested by a competent person and any defect disclosed by such examination and test shall be rectified forthwith.

(2) A register containing particulars of such examination and test and the state of the plant and the repairs or alterations (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector.

8. *Provision of breathing apparatus.* — A breathing apparatus shall be provided for every person employed —

- (a) in chambers containing loose asbestos;
- (b) in cleaning of dust settling or filtering chambers or apparatus;
- (c) in cleaning the cylinders, including the doffer cylinders, or other parts of the carding machine by means of hand-strickles; and
- (d) in filling, beating or levelling in the manufacture or repair of insulating mattresses.

9. *Protective equipment.* — There shall be provided and maintained for the use of all persons employed in the cleaning of dust settling and filtering chambers, tunnels and ducts, suitable overalls and head coverings.

10. *Prohibition of employment of young persons.* — No person who is below 18 years shall be employed in or in connection with the manufacture of insulating mattresses, in mixing or blending of asbestos by hand, in sack cleaning, in chambers or apparatus for dust settling or filtering, in chambers containing loose asbestos, or in stripping or grinding the cylinders including the doffer cylinders or other parts of a carding machine.

11. *Medical examination.* — (1) No worker shall be employed in any factory on any of the processes specified in paragraph 1, unless he has been medically examined by the Certifying Surgeon and has been declared fit and has been granted a certificate of fitness in Form 29.

(2) Every worker employed on any of the aforesaid processes on the date on which this Schedule comes into force shall be medically examined by the Certifying Surgeon within three months of the said date.

(3) Every worker employed on any of the aforesaid processes on the date on which this Schedule comes into force, shall be radiologically examined by a qualified radiologist at the cost of the occupier

and the standard size chest X-ray plate shall be submitted to the Certifying Surgeon for medical examination within three months of the said date.

(4) Every worker employed on any of the aforesaid processes shall be medically examined by the Certifying Surgeon at intervals of six months after the first medical examination conducted under sub-paragraphs (1) and (2) and radiologically examined at an interval of 3 years after the first radiological examination conducted under sub-paragraphs (1), (2) and (3):

Provided that if at any time the Certifying Surgeon is of the opinion that any person employed in the said processes is required to be radiologically examined by a qualified Radiologist, he may direct the occupier to arrange for such examination at his cost and then to submit the standard size X-ray plate of the worker to the Certifying Surgeon.

(5) A worker already in employment and declared unfit by the Certifying Surgeon shall not be allowed to work on any of the processes specified in paragraph 1, unless he has been re-examined medically and radiologically, and had been certified to be fit to work on the said process again.

(6) A worker declared to be unfit to work on any of the aforesaid processes, may be employed on such other work or process as may be considered safe and as may be advised by the Certifying Surgeon:

Provided that if the Certifying Surgeon declares that a worker has been completely incapacitated and he is not fit to be employed on any process, such worker shall not be allowed to continue to work on any work or process.

(7) The Certifying Surgeon may direct that a worker may be X-rayed or he may be subjected to further examination by a specialist or to any other examination, clinical, pathological or otherwise or that he should undergo a specified treatment, and it shall be the responsibility of the occupier and manager to arrange for the specified examination and/or treatment and to bear all expenses thereof or in connection therewith.

(8) The Certifying Surgeon shall, after each examination grant a certificate in Form 29.

(9) The manager shall maintain all the certificates in a proper register or file and shall produce all the certificates before an Inspector whenever demanded.

(10) The manager shall maintain the details of every medical examination in Form 7 and the register shall be produced before an Inspector whenever demanded.

## SCHEDULE XV

### Handling or manipulation of corrosive substances

1. *Definitions.* — For the purposes of this Schedule —

(a) "corrosive operation" means an operation of manufacturing, storing, handling, processing, packing or using any corrosive substance in a factory; and

(b) "corrosive substance" includes sulphuric acid, nitric acid, hydrochloric acid, hydrofluoric

acid, carbolic acid, phosphoric acid, liquid chlorine, liquid bromine, ammonia or anhydrous liquid ammonia, sodium hydroxide or potassium hydroxide or mixtures thereof, or any other substance which the Government may by notification in the Official Gazette specify to be a corrosive substance.

2. *Flooring.* — The floor of every workroom of a factory in which corrosive operation is carried on shall be made of impervious, corrosion and fire resistant material and shall be so constructed as to prevent collection of any corrosive substance. The surface of such flooring shall be smooth and cleaned as often as necessary and maintained in a sound condition.

3. *Protective equipment.* — (1) The occupier shall provide for the use of all persons employed in any corrosive operation suitable protective wear for hands and feet, suitable aprons, face shields, chemical safety goggles and suitable respirators. The equipments shall be maintained in good order and shall be kept in clean and hygienic condition by disinfecting them and also suitably treating them to remove the ill effects of any absorbed chemicals. The occupier shall also provide suitable protective creams and other preparations to the workers wherever necessary.

(2) The protective equipment and preparations provided shall be used by the persons employed in any corrosive operation.

4. *Water facilities.* — Where any corrosive operation is carried on, there shall be provided as close to the place of such operation as possible, a source of clean water at a height of 210 centimetres from a pipe of 2.5 centimetres diameter and fitted with a quick acting valve so that in case of injury to the worker by any corrosive substance, the injured part can be thoroughly flooded with water. Whenever necessary, in order to ensure continuous water supply, a storage tank having a minimum length, breadth and height of 210 centimetres, 120 centimetres and 60 centimetres respectively or such dimensions as are approved by the Chief Inspector placed at floor level shall be provided as the source of clean water.

5. *Cautionary notice.* — A cautionary notice in the following form and printed in the language which majority of the workers employed understand, shall be displayed prominently close to the place where a corrosive operation is carried out and where it can be easily and conveniently read by the workers. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

#### CAUTIONARY NOTICE

##### DANGER

Corrosive substances cause severe burns and vapours thereof may be extremely hazardous.

Use protective wears.

In case of contact with corrosive substances immediately flood the affected part of body with plenty of water for at least 15 minutes.

Call for medical attention quickly.

6. *Transport.* — (1) Corrosive substances shall not be filled, moved or carried except in containers and when they are to be transported, the containers shall be placed in crates of sound construction and of sufficient strength.

(2) A container with a capacity of 10.0 litres or more of a corrosive substance shall be placed in a receptacle or crate and then carried by more than one person at a height below the waist line unless a suitable rubber wheeled cart is used for the purpose.

(3) Containers for corrosive substances shall be clearly labelled as such.

7. *Devices for handling corrosive substances.* — (1) Suitable tilting or lifting devices shall be used for emptying jars, carboys and other containers of corrosive substances.

(2) Corrosive substances shall not be handled by bare hands but by means of a suitable scoop or other device.

8. *Opening of valves.* — Valves fitted to containers holding a corrosive substance shall be opened with great care. If they do not work freely, they shall not be forced open. They shall be opened by a worker suitably trained for the purpose.

9. *Cleaning tanks, stills etc.* — (1) In cleaning out or removing residues from stills or other large chambers used for holding any corrosive substance, suitable implements made of wood or other material shall be used to prevent production of arseniuretted hydrogen (Arsine).

(2) Whenever it is necessary for the purpose of cleaning or other maintenance work for any worker to enter chamber tank, vat, pit or other confined space where a corrosive substance had been stored, all possible precautions required under Section 36 of the Act shall be taken to ensure the worker's safety.

(3) Wherever possible, before repairs are undertaken to any part of equipment in which a corrosive substance was handled, such equipment or part thereof shall be freed of any adhering corrosive substance by adopting suitable methods.

10. *Storage.* — (1) Corrosive substances shall not be stored in the same room with other chemicals, such as turpentine, carbides, metallic powders and combustible materials and cyanide salts as the accidental mixing thereof may cause a reaction which is either violent or it may give rise to toxic fumes and gases.

(2) Pumping or filling overhead tanks, receptacles, vats or other containers for storing corrosive substances shall be so arranged that there is no possibility of any corrosive substance overflowing and causing injury to any person.

(3) Every container having a capacity of twenty litres or more and every pipeline, valve and fitting used for storing or carrying corrosive substances shall be thoroughly examined every year for finding out any defects, and the defects so found out shall be rectified forthwith. A register shall be maintained of every such examination made and shall be produced before the Inspector whenever required.



11. *Fire extinguishers and fire fighting equipment.*—An adequate number of suitable types of fire extinguishers or other fire fighting equipments, depending on the nature of chemicals stored, shall be provided. Such extinguishers or other equipment shall be regularly tested and refilled. Clear instructions as to how the extinguishers or other equipment should be used, shall be printed in the language which majority of the workers employed understand and shall be affixed near each extinguisher or other equipment. Sufficient number of workers shall be trained in firefighting methods.

12. *Exemption.*—If on an application made by the manager of any factory the Chief Inspector is satisfied that owing to the exceptional circumstances, or the infrequency of the process or for any other reason to be recorded by him in writing, all or any of the provisions of this Schedule are not considered necessary for the protection of the persons employed therein, he may by a certificate in writing, which he may at any time revoke, exempt the factory from such of the provisions and subject to such conditions as he may specify therein.

## SCHEDULE XVI

### Processing of Cashewnut

1. *Application.*—This Schedule shall apply to all factories in which roasting, scrubbing and shelling of cashewnuts or extracting oil from cashewnuts or cashewnut shells are carried on.

2. *Prohibition of employment of women and young persons.*—No woman or person below 18 years shall be employed in any of the processes specified in paragraph 1 except in shelling of roasted cashewnuts.

3. *Protective clothing and equipment.*—The occupier shall provide and maintain for the use of all persons employed in roasting and scrubbing of cashewnuts or extracting oil from cashewnuts or cashewnut shells—

(a) suitable rubber or washable leather gloves;

(b) suitable type of impervious aprons with sleeves to cover body down to knees and shoulders; and

(c) suitable type of footwear to afford protection to feet and legs against cashewnut oil;

and for the workers employed in cashewnut shelling either—

(d) a protective ointment containing 10% of shellac; 55% of alcohol, 10% of sodium perborate, 5% of carbital and 20% talc; or

(e) sufficient quantity of kaolin and coconut oil; and

(f) any other material or equipment which the Chief Inspector of Factories may deem to be necessary for the protection of the workers.

4. *Use of protective clothing and equipment.*—Every person employed in processes specified in paragraph 1 shall make use of protective clothing and equipment supplied and arrangements shall be made by the occupier to supervise its use, maintenance and cleanliness.

5. *Disposal of shells, ashes, or oil of cashewnut.*—  
(1) Shells, ashes or oil of cashewnut shall not be stored in any room in which workers are employed and shall be removed at least twice a day to any pit or enclosed place in the case of shells and ashes and to closed containers kept in a separate room in the case of oil.

(2) No worker shall be allowed to handle shells or oil of cashewnuts without using the protective clothing or equipment provided under paragraph 3 above.

6. *Floors of workrooms.*—The floor of every workroom in which processes specified in paragraph 1 are carried on shall be of a hard material so as to be smooth and impervious and of even surface and shall be cleaned daily, and spillage of any cashewnut oil in any workroom shall be washed with soap and cleaned immediately.

7. *Seating accommodation.*—Workers engaged in shelling of cashewnuts shall be provided with adequate seats or work benches which shall be cleaned daily.

8. *Restrooms.*—(1) There shall be provided and maintained for the use of all persons employed in processes specified in paragraph 1, a suitable rest-room furnished with sufficient tables and chairs or benches.

(2) Separate lockers shall be provided where food, etc. shall be stored by workers before it is consumed in the rest-room.

9. *Food, drinks, etc. prohibited in workrooms.*—No food, drink, pan, supari or tobacco shall be brought or consumed by any worker in any room in which processes specified in paragraph 1 are carried out and no person shall remain in any such room during intervals for meals or rest.

10. *Washing facilities.*—Where roasting, scrubbing and shelling of cashewnuts or extracting oil from cashewnuts or cashewnut shells is carried on, there shall be provided and maintained in a clean state and good repair washing facilities, with a sufficient supply of soap, coconut oil, nail brushes and towels at the scale of one tap or stand pipe for every 10 workers, and the taps or stand pipes shall be spaced at a distance not less than 1.2 metres apart.

11. *Time allowed for washing.*—Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing, to each person employed in processes specified in paragraph 1.

12. *Smoke or gas produced by roasting cashewnuts.*—Where smoke or gas is produced in the operation of roasting, provision shall be made for removing the smoke or gas through a chimney of sufficient height and capacity or by such other arrangements, as may be necessary to prevent the gas or smoke escaping into the air or any place in which workers are employed.

13. *Storage of protective equipment.*—A suitable room or a portion of the factory suitably partitioned off, shall be provided exclusively for the storage of all the protective equipment supplied to the workers and no such equipment shall be stored in any place other than the room or places so provided.



14. *Medical examination.* — (1) Every person employed in processes specified in paragraph 1 shall be examined by the Certifying Surgeon once in every three months, or at such other intervals as may be specified in writing by the Chief Inspector of Factories on a day of which due notice shall be given to all concerned. The Certifying Surgeon shall examine and certify the workers in the premises of the factory.

(2) Every person employed shall present himself at the appointed time for examination by the Certifying Surgeon as provided in sub-paragraph (1).

(3) A health register in Form 7 containing the names of all persons employed in the process specified in paragraph 1 shall be kept.

(4) The Certifying Surgeon shall record the results of the examination against the name of each worker in the health register.

(5) No person whose services have been suspended on health grounds shall be employed in any process specified in paragraph 1, without the written sanction from the Certifying Surgeon duly entered in the health register.

(6) The occupier shall appoint a person trained in first aid who shall inspect daily the hands and feet of the persons employed in processes specified in paragraph 1. The occupier shall keep a record of such inspections in a register in a form approved by the Chief Inspector and any cases of blistering shall be brought to the notice of the Certifying Surgeon who shall direct them for such treatment as may deem to be necessary.

(7) The first-aid box shall also contain Burrow's solution 1 to 20 and aqueous solution tannic acid 10% for treatment of cases of dermatitis.

15. *Exemption.* — The Chief Inspector may grant exemption from the operation of any of these provisions if he is satisfied that their observance is not necessary for safeguarding the health of the workers.

## SCHEDULE XVII

### Compression of oxygen and hydrogen produced by electrolysis of water or by steam iron process

1. *Definition.* — For the purposes of this Schedule "compression of oxygen and hydrogen" means any process by which oxygen or hydrogen is manufactured or evolved by electrolytic process or by steam iron process.

2. *Application.* — This Schedule applies in respect of factories or any part thereof in which the process of compression of oxygen and hydrogen is carried on.

3. *Situation of Electrolyser Plant room, etc.* — The room in which electrolyser plant is installed shall be separate from the plant for storing and compressing oxygen and hydrogen. The room in which electric generator and the distribution panel are installed shall not communicate with any other room in which any process is carried on.

4. *Testing of purity.* — (1) The purity of oxygen and hydrogen shall be tested by a competent person at least once in every shift at the following posts: —

- (a) in the electrolysis room;
- (b) at the gasholder inlet; and
- (c) at the suction and of the compressor:

Provided, however, that if the electrolyser plant is fitted with automatic recorder of purity of oxygen and hydrogen with alarm lights, it shall be sufficient if the purity of gases is tested at the suction end of the compressor only.

(2) The purity figures obtained as a result of the test shall be entered in a register and signed by the persons carrying out such tests.

5. *Restriction as to the compression.* — The oxygen and hydrogen gases shall not be compressed if their purity as determined under paragraph 4 above falls below 98% at any time.

6. *Limit switch for gasholder.* — The bell of any gasholder shall not be permitted to go within 30 centimetres of its lowest position when empty and a limit switch shall be fitted to the gas holder in such manner as to switch off the compressor motor when the limit is reached.

7. *Provision of negative pressure switch.* — In addition to the limit switch in the gasholder, a sensitive negative pressure switch shall be provided in or adjacent to the suction main for hydrogen, close to the gasholder and between the gasholder and the hydrogen compressor, to switch off the compressor motor in the event of the gasholder being emptied to such an extent as to cause vacuum.

8. *Purity of raw material.* — The water and caustic soda used for making lye shall be chemically pure within pharmaceutical limits.

9. *Precautions against reversal of polarity.* — Electrical connections at the electrolyser cells and at the electric generator terminals shall be so constructed as to preclude the possibility of wrong connections leading to the reversal of polarity and in addition an automatic device shall be provided to cut off power in the event of reversal of polarity owing to wrong connections either at the switch board or the electric generator terminals.

10. *Colouring of gas pipes.* — Oxygen and hydrogen gas pipes shall be painted with distinguishing colours and in the event of leakage at the joints of hydrogen gas pipe, the pipe and storage system after repairs and reconnection carried out as per paragraph 13 of this Schedule and in accordance with the provisions of rule 83 of the Goa, Daman and Diu Factories Rules, 1982, shall be purged of all air and gases using a suitable inert gas before drawing in hydrogen gas. Before drawing in hydrogen gas in any new or existing system which was not in use, every pipe, gas-holder or compressed gas vessel in the said system shall be purged of all air and gases by using a suitable inert gas.

11. *Use of flameproof fittings.* — All electrical wiring and apparatus, wherever hydrogen gas is generated, compressed, transferred or stored, shall be of flameproof construction or enclosed in flame-

proof fittings and no naked light or flame shall be allowed to be taken either in the electrolyser room or where compression and filling of the gases is carried on an warning notices shall be exhibited in prominent places to that effect.

12. *Prohibition of hot work.* — No part of the electrolyser plant or the gasholder or compressor shall be subjected to welding, brazing, soldering or cutting until steps have been taken to remove any explosive substance from that part and render that part safe for such operations and after the completion of such operations no explosive substance shall be allowed to enter that part until the metal has cooled sufficiently to prevent risk of explosion.

13. *Repair, etc. to be done under supervision.* — No work of operation, repair or maintenance shall be undertaken except under the direct supervision of a person who, by his training, experience and knowledge of the necessary precautions against risk of explosion is competent to supervise such work. No electric generator after erection or repairs shall be switched on to the electrolyzers unless the same is certified by competent persons under whose direct supervision, erection or repairs are carried on to be in a safe condition and the terminals have been checked for the polarity as required by paragraph 9.

14. *Examination of the plant.* — Every part of the electrolyser plant and the gas-holders and compressor shall be inspected, checked and overhauled in accordance with a regular schedule maintained by the Manager complying with the instructions of the competent person mentioned in paragraph 13. Every defect noticed shall be rectified forthwith.

#### SCHEDULE XVIII

##### Process of extracting oils and fats from vegetable and animal source in solvent extraction plants

1. *Definitions.* — For the purposes of this Schedule —

(a) "solvent extraction plant" means a plant in which the process of extracting oils and fats from vegetable and animal sources by use of solvents is carried on;

(b) "solvent" means an inflammable liquid such as pentane, hexane and heptane used for the recovery of vegetable oils;

(c) "flameproof enclosure" as applied to electrical machinery or apparatus means an enclosure that will withstand, when covers or other access doors are properly secured, an internal explosion of the inflammable gas or vapour which may enter or which may originate inside the enclosure without suffering damage and without communicating internal inflammation (or explosion) to the external inflammable gas or vapour;

(d) "competent person" for the purpose of this Schedule shall be at least a Member of the Institution of Engineers (India) or an Associate Member of the said Institution with 10 years experience in a responsible position as may be approved by the Chief Inspector:

Provided that a graduate in mechanical engineering or chemical technology with specialised knowledge of oils and fats and with a minimum

experience of 5 years in a solvent extraction plant shall also be considered to be a competent person:

Provided further that the Government may accept any other qualifications which in its opinion are equivalent to the qualifications aforesaid.

2. *Location and layout.* — (1) No solvent extraction plant shall be permitted to be constructed or extended to within a distance of 30 metres from the nearest residential locality.

(2) A 1.5 metres high continuous wire fencing shall be provided around the solvent extraction plant upto a minimum distance of 15 metres from the plant.

(3) No person shall be allowed to carry any matches or an open flame or fire inside the area bound by the fencing.

(4) Boiler houses and other buildings where open flame processes are carried on shall be located at least 30 metres from the solvent extraction plant.

(5) If godowns and preparatory processes are at a distance of less than 30 metres from the solvent extraction plant, these shall be at least 15 metres distance from the plant, and a continuous barrier wall of non-combustible material 1.5 metres high shall be erected at a distance of not less than 15 metres from the solvent extraction plant so that it extends to at least 30 metres of vapour travel around its ends from the plant to the possible sources of ignition.

3. *Electrical installations.* — (1) All electrical motors and wiring and other electrical equipment installed or housed in solvent extraction plant shall be of flameproof construction.

(2) All metal parts of the plant and building including various tanks and containers where solvents are stored or are present and all parts of electrical equipment not required to be energised shall be properly bonded together and connected to earth so as to avoid accidental rise in the electrical potential of such parts above the earth potential.

4. *Restriction on smoking.* — Smoking shall be strictly prohibited within 15 metres distance from solvent extraction plant. For this purpose, "No Smoking" signs shall be permanently displayed in the area.

5. *Precautions against friction.* — (1) All tools and equipment including ladders, chains and other lifting tackle required to be used in solvent extraction plant shall be of non-sparking type.

(2) No machinery or equipment in solvent extraction plant shall be belt driven unless the belt used is of such a type that it does not permit accumulation of static electricity to a dangerous level.

(3) No person shall be allowed to enter and work in the solvent extraction plant if he is wearing clothes made of nylon or such other fibre that can generate static electrical charge, or wearing footwear which is likely to cause sparks by friction.

6. *Fire fighting apparatus.* — (1) Adequate number of portable fire extinguishers suitable for use against inflammable liquid fires shall be provided in the solvent extraction plant.

(2) An automatic water spray sprinkler system on a wet pipe or open-head deluge system with sufficient supply of storage water shall be provided over solvent extraction plant and throughout the building which is housing such a plant.

7. *Precautions against power failure.* — Provision shall be made for the automatic cutting off of steam in the event of power failure and also for emergency overhead water supply for feeding water by gravity to condensers which shall come into play automatically with the power failure.

8. *Magnetic separators.* — Oil cake shall be fed to the extractor by a conveyor through a hopper and a magnetic separator shall be provided to remove any pieces of iron during its transfer.

9. *Venting.* — (1) Tanks containing solvents shall be protected with emergency venting to relieve excessive internal pressure in the event of fire.

(2) All emergency relief vents shall terminate at least 6 metres above the ground and the so located that vapours will not re-enter the building in which solvent extraction plant is located.

10. *Waste water.* — Process waste water shall be passed through a flash evaporator to remove any solvent before it is discharged into a sump which should be located within the fenced area but not closer than 8 metres to the fence.

11. *Ventilation.* — The solvent extraction plant shall be well ventilated and if the plant is housed in a building, the building shall be provided with mechanical ventilation with provision for at least six air changes per hour.

12. *Housekeeping.* — (1) Solvent shall not be stored in an area covered by solvent extraction plant except in small quantities which shall be stored in approved safety cans.

(2) Waste materials such as oily rags, other wastes and absorbants used to wipe off solvent and paints and oils shall be deposited in approved containers and removed from the premises at least once a day.

(3) Space within the solvent extraction plant and within 15 metres from the plant shall be kept free from any combustible materials and any spills of oil or solvent, shall be cleaned up immediately.

13. *Examination and repairs.* — (1) The solvent extraction plant shall be examined by the competent person to determine any weakness or corrosion and wear once in every 12 months. Report of such examination shall be supplied to the Inspector with his observation as to whether or not the plant is in safe condition to work.

(2) No repairs shall be carried out to the machinery or plant except under the direct supervision of the competent person.

(3) Facility shall be provided for purging the plant with inert gas or steam before opening the same for cleaning or repairs and before introducing solvent therein after repairs.

14. *Operating personnel.* — The operation of the plant and machinery in the solvent extraction plant shall be in the charge of such duly qualified and trained persons as are certified by the competent person to be fit for the purpose and no other person shall be allowed to operate the plant and machinery.

15. *Employment of women and young persons.* — No woman or person who is below 18 years shall be employed in the solvent extraction plant.

16. *Vapour detection.* — A suitable type of flame-proof and portable combustible gas indicator shall be provided and maintained in good working order and a schedule of routine sampling of atmosphere at various locations as approved by the Chief Inspector shall be drawn out and entered in a register maintained for the purpose.

17. *Exemption.* — If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reasons, all or any of the provisions of this schedule is not necessary for the protection of the workers in the factory, the Chief Inspector may, by a certificate in writing, which he may revoke at any time, exempt such factory from all or any of such provisions subject to such conditions as he may specify therein.

## SCHEDULE XIX

### Manufacture or manipulation of manganese and its compounds

1. *Application.* — This Schedule shall apply to every factory in which or in any part of which any manganese process is carried on.

2. *Definitions.* — For the purposes of this Schedule —

(a) "manganese process" means processing, manufacture or manipulation of manganese or any compound of manganese or any ore or any mixture containing manganese;

(b) "first employment" means first employment in any manganese process and includes also re-employment in any manganese process following any cessation of employment for a continuous period exceeding 3 calendar months;

(c) "manipulation" means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping or otherwise handling of manganese or a compound of manganese, or any ore or any mixture containing manganese; and

(d) "efficient exhaust ventilation" means localised ventilation effected by mechanical means for the removal of dust or fume or mist at its source of origin so as to prevent it from escaping into the atmosphere of any place where any work is carried on. No draught shall be deemed to be efficient which fails to remove the dust or fume or mist at the point where it is generated and fails to prevent it from escaping into and spreading into the atmosphere of a work place.

3. *Isolation of a process.* — Every manganese process which may give rise to dust, vapour or mist containing manganese, shall be carried on in a

totally enclosed system or otherwise effectively isolated from other processes so that other plants and processes and other parts of the factory and persons employed on other processes may not be effected by the same.

4. *Ventilation of process.*—No process in which any dust, vapour or mist containing manganese is generated, shall be carried out except under an efficient exhaust ventilation which shall be applied as near to the point of generation as practicable.

5. *Personal protective equipment.*—(1) The occupier of the factory shall provide and maintain in good and clean condition suitable overalls and head coverings for all persons employed in any manganese process and such overalls and head coverings shall be worn by the persons while working on a manganese process.

(2) The occupier of the factory shall provide suitable respiratory protective equipment for use by workers in emergency to prevent inhalation of dusts, fumes or mists. Sufficient number of complete sets of such equipment shall always be kept near the work place and the same shall be properly maintained and kept always in a condition to be used readily.

(3) The occupier shall provide and maintain for the use of all persons employed, suitable accommodation for the storage of personal protective equipment and make adequate arrangements for cleaning and maintenance thereof.

6. *Prohibition relating to women and young persons.*—No woman or person below 18 years shall be employed or permitted to work in any manganese process.

7. *Food, drinks, etc. prohibited in the work rooms.*—No food, drink, pan and supari or tobacco shall be allowed to be brought into or consumed by any worker in any workroom in which any manganese process is carried on.

8. *Messroom.*—There shall be provided and maintained for the use of the persons employed in a manganese process a suitable messroom which shall be furnished with sufficient tables and benches and adequate means for warming of food. The messroom shall be placed under the charge of a responsible person and shall be kept clean.

9. *Washing and bathing facilities.*—The following washing and bathing facilities shall be provided and maintained in clean state and in good repair for the use of all persons employed in manganese process:—

(a) A wash place under cover with clean towels, soap and nail brushes and with at least one stand pipe for every ten such persons having constant supply of water.

(b) 50 per cent of the stand pipes provided under item (a) above may be located in bathroom where water shall be made available during the working hours of the factory and for one hour thereafter.

(c) Clean towels to be provided individually to each worker and also a supply of hot water if so ordered by an Inspector.

(d) In addition to taps mentioned under item (a) one stand pipe in which warm water is made available to be provided on each floor.

10. *Cloakroom.*—If the Chief Inspector so requires, there shall be provided and maintained for the use of persons employed in manganese process, a cloakroom for clothing put off during working hours with adequate arrangements for drying the clothing.

11. *Cautionary placard and instructions.*—Cautionary notices in the form specified in appendix and printed in the language of the majority of the workers employed, shall be affixed in prominent places in the factory where they can be easily and conveniently read by the workers and arrangement shall be made by the occupier to instruct periodically all workers employed in a manganese process regarding the health hazards connected with their duties and the best preventive measures and methods to be adopted to protect themselves. The notices shall always be maintained in legible condition.

12. *Medical facilities.*—(1) The occupier of the factory shall appoint a qualified Medical Practitioner whose appointment shall be subject to confirmation by the Chief Inspector. The qualified Medical Practitioner so appointed shall be called 'Appointed Doctor'.

(2) The occupier shall provide for the purpose of Medical Examination a room at the factory premises for exclusive use by appointed Doctor. The room so provided shall be properly cleaned, adequately lighted, ventilated and furnished with a screen, a table (with writing materials), chairs and facilities, equipments, and instruments for examination and investigation. Such facilities shall be subject to the approval by the Medical Inspector of Factories.

(3) The appointed Doctor shall carry out pre-employment examination of every person intended to be employed in manganese process. All workers employed in manganese process shall be examined by the appointed Doctor at an interval not exceeding three months and records of such examinations shall be maintained in a form approved by the Chief Inspector and shall be made available to any Inspector on demand.

(4) The occupier and the appointed Doctor of the factory shall notify forthwith any case or suspected case of poisoning by manganese to the Chief Inspector and Medical Inspector of Factories.

13. *Medical examination.*—(1) Every person employed in a manganese process shall be medically examined by the Certifying Surgeon within 14 days of his first employment and thereafter at intervals of not more than three months.

(2) If a person medically examined is found fit for employment on a manganese process the Certifying Surgeon, shall grant a certificate of fitness in Form 28, which shall be kept in the custody of the manager of the factory. The certificate shall be readily produced by the manager whenever required by any Inspector, and the person granted such a certificate shall be provided with a token made of

metal with the number of the certificate inscribed thereon and the said person shall always carry the said token on the person while at work.

(3) If a person is found unfit for work in any manganese process, the Certifying Surgeon shall grant a certificate to that effect and such person shall not be allowed to work in any manganese process.

(4) (a) If the Certifying Surgeon finds that any worker who had been granted a certificate of fitness at a previous medical examination is no longer fit to be employed on any manganese process, he may revoke the previous certificate and no person whose certificate of fitness has been so revoked shall be allowed to work on any manganese process.

(b) The Certifying Surgeon may require such person to be produced before him for fresh medical examination after such period as he may specify in writing on the revoked certificate and duly entered in the health register.

(5) If the Certifying Surgeon is of the opinion that a person had become permanently unfit for employment on any manganese process, he shall make an entry to that effect in the certificate and also in the health register and no such person shall be allowed to work in any manganese process.

(6) If the Certifying Surgeon is of the opinion that any special expert examination or test is necessary for a proper diagnosis in a doubtful case, he may direct the manager and/or the occupier to get the worker examined by such expert, or to get such tests carried out as may be specified by him and the manager or the occupier as the case may be, shall comply with the direction given within a specified time and produce the report of the examination or test as the case may be, before the Certifying Surgeon.

(7) If the Certifying Surgeon is of the opinion that any person is not fit for employment in any manganese process but is fit to be employed on any other work he may advise the manager or the occupier to employ the said person on such other job as may be safe for him. The Certifying Surgeon may also advise the worker to undergo such treatment as he may consider necessary.

(8) If any person has any doubt regarding the diagnosis or decision of the Certifying Surgeon he may make an appeal to the Chief Inspector and the Chief Inspector may refer the case to the Medical Inspector of Factories or to a Medical Committee constituted by him for this purpose of which the Medical Inspector of Factories shall be a member. The decision of the Medical Inspector or the Committee as the case may be, shall be final in the matter.

14. *Exemption.* — If in respect of any factory, the Chief Inspector is satisfied that owing to any exceptional circumstances, or infrequency of the process, or for any other reason, application of all or any of the provisions of this Schedule is not necessary for the protection of the person employed in such factory he may, by an order in writing which he may at his discretion revoke, exempt such factory from all or any of the provisions on such conditions and for such period as he may specify in the said order.

## APPENDIX

### CAUTIONARY NOTICE

#### Manganese and manganese compounds

1. Dust fumes and mists of manganese and its compounds are toxic when inhaled or when ingested.
2. Do not consume food or drink near the work places.
3. Take a good wash before taking meals.
4. Keep the working area clean.
5. Use the protective clothing and equipment provided.
6. When required to work in situation where dust, fumes, or mists are likely to be inhaled, use respiratory protective equipment provided for the purpose.
7. If you get severe headaches, prolonged sleeplessness or abnormal sensations on the body, report to the manager who would make arrangements for your examination and treatment.

## SCHEDULE XX

### Manufacture or manipulation of dangerous pesticides

1. *Application.* — This Schedule shall apply in respect of all factories or any part thereof in which the process of manufacture or manipulation of dangerous pesticide hereinafter referred to as the said manufacturing process is carried on.

2. *Definitions.* — For the purpose of this Schedule —

(a) “dangerous pesticides” means any product proposed or used for controlling, destroying or repelling any pest or for preventing growth or mitigating effects of growth of such pests including any of its formulations which is considered toxic as are included in the list to Appendix I to this Schedule and also as covered under the Insecticides Act, 1968 and the rules made thereunder and any other product, as may be declared as a dangerous pesticide from time to time by the Chief Inspector in writing;

(b) “manipulation” includes mixing, blending, formulating, filling, emptying, packing or otherwise handling;

(c) “efficient exhaust draught” means localised mechanical ventilation for removal of smoke, gas, vapour, dust, fume or mist so as to prevent them from escaping into the air any work room in which work is carried on. No exhaust draught shall be considered efficient if it fails to remove smoke generated at the point where such gas, fume, dust, vapour or mist originates from the process;

(d) “first employment” means first employment in any manufacturing process to which this Schedule applies and shall also include re-employment in the said manufacturing process following any cessation of employment for a continuous period exceeding three calendar months; and



(e) "suspension" means suspension of persons from employment in any process wherein a dangerous pesticide is manipulated, by written certificate in the health register in Form 7 signed by the Certifying Surgeon who shall be competent to suspend all persons employed in such process.

3. *Instruction to workers.* — Every worker on his first employment shall be fully instructed about the properties including dangerous properties of the chemicals handled in the said manufacturing process and the hazards involved thereunder. The employees shall also be instructed about the measures to be adopted to deal with any emergency. Such instructions shall be repeated periodically.

4. *Cautionary notice and placards.* — Cautionary notices and placards in the form specified in appendix II to this Schedule and printed in the language of the majority of the workers shall be displayed in all work places in which said manufacturing process is carried on so that they can be easily and conveniently read by the workers. Arrangements shall be made by the occupier and the manager of the factory to periodically instruct the workers regarding the health hazards arising in the said manufacturing process and the methods of protection therefrom. Such notices shall include brief instructions regarding the periodical clinical tests required to be undertaken for protecting health of the workers.

5. *Prohibition relating to employment of women or young persons.* — No woman or person below 18 years shall be employed or permitted to work in any room in which the said manufacturing process is carried on or in any room in which dangerous pesticide is stored.

6. *Food, drinks and smoking prohibited.* — (1) No food, drink, tobacco, pan or supari shall be brought into or consumed by any worker in any workroom in which the said manufacturing process is carried out.

(2) Smoking shall be prohibited in any workroom in which the said manufacturing process is carried out.

7. *Protective clothing and protective equipment.* — (1) Protective clothing consisting of long pants and shirts or overalls with long sleeves and head covering shall be provided for all workers employed in the said manufacturing process.

(2) (a) Protective equipment consisting of rubber gloves, gum boots, rubber aprons, chemical safety goggles and respirators shall be provided for all workers employed in the said manufacturing process.

(b) Where the pesticides contain oil, groves, boots and aprons used shall be made from synthetic rubber.

(3) Protective clothing and equipment shall be worn by the workers supplied with such clothing and equipment.

(4) Protective clothing and equipment shall be washed daily both inside and outside if the workers handle pesticides containing nicotine or phosphorous and shall be washed frequently if they handle other pesticides.

(5) Protective clothing and equipment shall be maintained in good repair.

8. *Floors and workbenches.* — (1) Floors in every workroom where dangerous pesticides are manipulated shall be of cement or other impervious material giving a smooth surface.

(2) Floors shall be maintained in good repair and shall be provided with adequate slope leading to a drain and thoroughly washed once a day with hose pipe.

(3) Work-benches where dangerous pesticides are manipulated shall be made of smooth, non-absorbing material preferably stainless steel and shall be cleaned at least once daily.

9. *Spillage and waste.* — (1) If a dangerous pesticide during its manipulation splashes or spills on the workbench, floor or on the protective clothing worn by a worker, immediate action shall be taken for thorough decontamination of such areas or articles.

(2) Cloth, rags, paper or other material soaked or soiled with dangerous pesticide shall be deposited in a suitable receptacle with tight fitting cover. Contaminated waste shall be destroyed by burning it at least once a week.

(3) Suitable deactivating agents, where available, shall be kept in a readily accessible place for use while attending to a spillage.

(4) Easy means of access shall be provided to all parts of the plant for cleaning, maintenance and repairs.

10. *Empty containers used for dangerous pesticides.* — Containers used for dangerous pesticides shall be thoroughly cleaned of their contents and treated with a deactivating agent before being discarded or destroyed.

11. *Manual handling.* — (1) A dangerous pesticide shall not be required or allowed to be manipulated by hand except by means of a long handel scoop.

(2) Direct contact of any part of the body with a dangerous pesticide during its manipulation shall be avoided.

12. *Air space.* — In every room in which the said manufacturing process is carried on, there shall be at least 15 cubic metres of air space, excluding any space occupied by machinery equipment or any other articles, for any person employed therein, and in computing this air space no height over 3.5 metres shall be taken into account.

13. *Ventilation.* — (1) In very workroom or area where a dangerous pesticide is manipulated, adequate ventilation shall be provided at all times by the circulation of fresh air.

(2) Unless the process is completely enclosed in an airtight chamber the following operations during manipulation of a dangerous pesticide shall not be undertaken without an efficient exhaust draught —

(a) emptying a container holding a dangerous pesticide;

(b) blending a dangerous pesticide;



(c) preparing a liquid or powder formulation containing a dangerous pesticide; and

(d) changing or filling a dangerous pesticide into a container, tank hopper or machine or small sized containers.

(3) In the event of a failure of the exhaust draught as provided above the said operations shall be stopped forthwith.

14. *Time allowed for washing.* — (1) Before each meal and before the end of the day's work at least ten minutes in addition to the regular rest intervals shall be allowed for washing to each worker engaged in the manipulation of dangerous pesticide.

(2) Every worker engaged in the manipulation of dangerous pesticides shall have a thorough wash before consuming any food and also at the end of the day's work.

15. *Washing and bathing facilities.* — (1) There shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the factory where the said manufacturing process is carried on, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 5 persons employed.

(2) The washing places shall have standpipes place at intervals of not less than one metre.

(3) Not less than one half of the total number of washing places shall be provided with bathrooms.

(4) Sufficient supply of clean towels made of suitable material shall be provided:

Provided that such towels shall be supplied one for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nail brushes shall be provided.

16. *Cloakroom.* — There shall be provided and maintained for the use of all workers employed in the factory where the said manufacturing process is carried on —

(a) a cloakroom for clothing put off during working hours with adequate arrangements for drying the said clothing, if wet; and

(b) separate and suitable arrangements for the storage of protective clothing provided in paragraph 7.

17. *Messroom.* — (1) There shall be provided and maintained for the use of all workers employed in the factory in which the said manufacturing process is carried on and remaining on the premises during the rest intervals, a suitable messroom which shall be furnished with —

(a) sufficient tables and benches with back rest, and

(b) adequate means for warming food.

(2) The messroom shall be placed under the charge of a responsible person and shall be kept clean.

18. *Manipulation not to be undertaken.* — Manufacture or manipulation of a pesticide shall not be

undertaken in any factory unless a certificate regarding its dangerous nature or otherwise is obtained from the Chief Inspector.

19. *Medical examination.* — (1) (a) Every worker employed in the said manufacturing process shall be examined by the Certifying Surgeon within seven days of the first employment and no worker shall be allowed to work unless certified fit for such employment by the Certifying Surgeon.

(b) Every worker employed in the said manufacturing process shall be re-examined by the Certifying Surgeon at least once in every 3 calendar months.

(c) Due notice shall be given to the Certifying Surgeon and the concerned workers regarding the arrangements for examination of workers employed in the said manufacturing process after obtaining the consent regarding the arrangement from the Certifying Surgeon.

(d) A health register in Form 7 containing names of all workers employed in the said manufacturing process shall be maintained.

(e) No person whose services have been suspended on health grounds shall be re-employed without written sanction from the Certifying Surgeon entered in or attached to the health register.

(2) The Chief Inspector may order suitable clinical test or tests to be carried out at specified intervals in respect of workers in any factory where such manufacturing process is carried on. Charges for such test or tests shall be borne by the employer.

20. *Medical facilities.* — (1) The occupier shall engage a qualified medical practitioner approved by the Chief Inspector who shall examine and when necessary treat on the premises of the factory, all workers who are employed in the said manufacturing process, for effects of excessive absorption of the dangerous pesticides at least once a week.

(2) The occupier shall make necessary arrangements to ensure quick availability of qualified medical practitioner in emergency.

(3) The occupier shall provide medicines and antidotes and other equipment required for treatment of excessive absorption of dangerous pesticides.

(4) Records of such examinations and treatments and test shall be maintained in a form approved by the Chief Inspector and shall be made available to the Inspector for inspection.

(5) Every worker in any factory where the said manufacturing process is carried on, shall undergo the prescribed examinations, tests and treatments.

21. *Exemption.* — If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or the infrequency of the said manufacturing process or for any other reason which he shall record in writing, all or any of the provisions of this Schedule are not necessary for the protection of the workers employed in the said factory, he may by a certificate, in writing, exempt such factory, from all or any of the provisions on such condition as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector after recording his reasons therefor.

## APPENDIX I

## List of dangerous pesticides

Parthion  
 Diazinon  
 Hexaethyl tetraphosphate  
 Tetraethyl pyrophosphate  
 Tetraethyl dithiopyrophosphate  
 Demeton (systex)  
 Schradan (OMPR)  
 Para-Oxon (E.600)  
 Methyl Parathion  
 Dimefox  
 Sulphotepp  
 EPN  
 Nicotine or its compounds  
 Mercury compounds  
 Methyl bromide  
 Cyanides  
 Chlordane  
 Endrin  
 Aldrin  
 Dieldrin  
 Texaphene  
 Dinitro-o-cresol  
 Arsenical compounds  
 Cryolite  
 Pentachlorophenol.

## APPENDIX II

## CAUTIONARY NOTICE

## Insecticides and pesticides

1. Chemicals handled in this plant are poisonous substances.
2. Smoking, eating food or drinking, chewing tobacco in this area is prohibited. No food stuff or drink shall be brought in this area.
3. Some of these chemicals may be absorbed through skin and may cause poisoning.
4. A good wash shall be taken before meals.
5. A good bath shall be taken at the end of the shift.
6. Protective clothing and equipment supplied shall be used while working in this area.
7. Containers of pesticides shall not be used for keeping food stuffs.
8. Spillage of the chemicals on any part of the body or on the floor or work-bench shall be immediately washed away with water.
9. Clothing contaminated due to splashing shall be removed immediately.
10. Scrupulous cleanliness shall be maintained in this area.
11. Do not handle pesticides with bare hands, use scoops provided with handle.
12. In case of sickness like nausea, vomiting, giddiness, the manager should be informed who will make necessary arrangements for treatment.
13. All workers shall report for the prescribed medical tests regularly to protect their own health.

## SCHEDULE XXI

## Manufacture, handling and usage of benzene and substances containing benzene

1. *Application.* — This Schedule shall apply in respect of factories or parts thereof in which benzene or substances containing benzene are manufactured, handled or used.

2. *Definitions.* — For the purpose of this Schedule —

(a) "substances containing benzene" means substances wherein benzene content exceeds 1 per cent by volume;

(b) "substitute" means a chemical which is harmless or less harmful than benzene and can be used in place of benzene;

(c) "enclosed system" means a system which will not allow escape of benzene vapour to the working atmosphere; and

(d) "efficient exhaust draught" means localised ventilation effected by mechanical means for the removal of gases, vapour and dusts or fumes so as to prevent them from escaping into the air of any workroom. No draught shall be deemed to be efficient if it fails to remove smoke generated at the point where such gases, vapours, fumes or dusts originate.

3. *Prohibition and substitution.* — (1) Use of benzene and substances containing benzene is prohibited in the following processes —

(a) manufacture of varnishes, paints and thinners; and

(b) cleaning and degreasing operations.

(2) Benzene or substances containing benzene shall not be used as a solvent or diluent unless the process in which it is used is carried on in an enclosed system or unless the process is carried on in a manner which is considered equally safe as if it were carried out in an enclosed system.

(3) Where suitable substitutes are available, they shall be used instead of benzene or substances containing benzene. This provision, however, shall not apply to the following processes: —

(a) production of benzene;

(b) process where benzene is used for chemical synthesis; and

(c) motor spirits (used as fuel).

(4) The Chief Inspector may, subject to confirmation by the Government, permit exemptions from the percentage laid down in sub-paragraph 2(a) and also from the provisions of sub-paragraph (3) of this paragraph temporarily under conditions and within limits of time to be determined after consultation with the employers and workers concerned.

4. *Protection against inhalation.* — (1) The process involving the use of benzene or substances containing benzene shall be as far as practicable carried out in an enclosed system.

(2) Where, however, it is not practicable to carry out the process in an enclosed system, the workroom

in which benzene or substances containing benzene are used shall be equipped with an efficient exhaust draught or other means for the removal of benzene vapours to prevent their escape into the air of the workroom so that the concentration of benzene in the air does not exceed 25 parts per million by volume or 80 milligrams per cubic metre.

(3) Air analysis for the measurement of concentration of benzene vapours in air shall be carried out every 8 hours or at such intervals as may be directed by the Chief Inspector at places where process involving use of benzene is carried on and the result of such analysis shall be recorded in a register specially maintained for this purpose. If the concentration of benzene vapours in air as measured by air analysis, exceeds 25 parts per million by volume or 80 milligrams per cubic metre, the Manager shall forthwith report the concentration to the Chief Inspector stating the reasons for such increase.

(4) Workers who for special reasons are likely to be exposed to concentration of benzene in the air of the workroom exceeding the maximum referred to in sub-paragraph (2) shall be provided with suitable respirators or face masks. The duration of such exposure shall be limited as far as possible.

5. *Measures against skin contact.* — (1) Workers who are likely to come in contact with liquid benzene or liquid substances containing benzene shall be provided with suitable gloves, aprons, boots and where necessary vapour tight chemical goggles, made of material not affected by benzene or its vapours.

(2) The protective wear referred to in sub-paragraph (1) shall be maintained in good condition and inspected regularly.

6. *Prohibition relating to employment of women and young persons.* — No woman or person below 18 years shall be employed or permitted to work in any workroom involving exposure to benzene or substances containing benzene.

7. *Labelling.* — Every container holding benzene or substances containing benzene shall have the word "Benzene" and approved danger symbols clearly visible on it and shall also display information on benzene content, warning about toxicity and warning about inflammability of the chemical.

8. *Improper use of benzene.* — (1) The use of benzene or substances containing benzene by workers for cleaning their hands or their work clothing shall be prohibited.

(2) Workers shall be instructed on the possible dangers arising from such misuse.

9. *Prohibition of consuming food, etc. in workroom.* — No worker shall be allowed to store or consume food or drink in the workroom in which benzene or substances containing benzene are manufactured, handled or used. Smoking and chewing tobacco or pan shall be prohibited in such workroom.

10. *Instructions as regards risks.* — Every worker on his first employment shall be fully instructed on the properties of benzene or substances containing benzene which he has to handle and of the dangers involved thereunder. Workers shall also be ins-

tructed on the measures to be taken to deal with in an emergency.

11. *Cautionary notices.* — Cautionary notices in the form specified in appendix and printed in the language easily read and understood by the majority of the workers shall be displayed in prominent places in the workrooms where benzene or substance containing benzene are manufactured, handled or used.

12. *Washing facilities, cloakroom and messroom.* — In factories in which benzene or substances containing benzene are manufactured, handled or used, the occupier shall provide and maintain in a clean state and in good repair —

(a) washing facilities under cover, of the standard of at least one tap for every 10 persons having constant supply of water with soap, and a clean towel provided to each individual worker if so ordered by the Inspector;

b) a cloakroom with lockers for each worker, having two compartments — one for street-clothing and one for work-clothing; and

(c) a messroom furnished with tables and benches with means for warming food, provided that where a canteen or other proper arrangements exist for the workers to take their meals, the requirements of messroom shall be dispensed with.

13. *Medical examination.* — (1) Every worker who is to be employed in processes involving use of benzene or substances containing benzene, shall undergo —

(a) a thorough pre-employment medical examination including a blood test for fitness for employment by a Certifying Surgeon; and

(b) periodical medical examination including blood test and other biological tests at intervals of every 6 months by the factory medical officer with the assistance of a laboratory.

(2) Certificates of pre-employment medical examination and periodical medical examination including tests, shall be entered in a health register in Form 7 which shall be produced on demand by an Inspector.

(3) (a) If the factory medical officer on examination at any time is of the opinion that any worker has developed signs or symptoms of benzene exposure, he shall make a record of his findings in the said register and inform the manager in writing.

(b) On receipt of the information from the factory medical officer, the manager of the factory shall send the worker so found exposed, to the Certifying Surgeon who shall, after satisfying himself with the findings of the factory medical officer and conducting necessary examinations, issue orders of temporary shifting of the worker or suspension of the worker in the process.

(4) The medical examination shall be arranged by the occupier or manager of the factory and the worker so examined shall not bear any expenses for it.

## APPENDIX

## CAUTIONARY NOTICE

## Benzene and substances containing benzene

## 1. Hazards:

(a) Benzene and substances containing benzene are harmful.

(b) Prolonged or repeated breathing of benzene vapours may result in acute or chronic poisoning.

(c) Benzene can also be absorbed through skin which may cause skin and other diseases.

## 2. Preventive measures:

(a) Avoid breathing of benzene vapours.

(b) Avoid prolonged or repeated contact of benzene with the skin.

(c) Remove benzene soaked or wet clothing promptly.

(d) If any time you are exposed to high concentration of benzene vapours and exhibit signs and symptoms such as dizziness, difficulty in breathing, excessive excitation and losing of consciousness, immediately inform your factory manager.

(e) Keep all the containers of benzene closed.

(f) Handle, use and process benzene and substances containing benzene carefully in order to prevent their spillage on floor.

(g) Maintain good housekeeping.

## 3. Protective equipment:

(a) Use respiratory protective equipment in places where benzene vapours are present in high concentration.

(b) In emergency, use self generating oxygen mask or oxygen or air cylinder masks.

(c) Wear hand gloves, aprons, goggles and gum boots to avoid contact of benzene with your skin and other body parts.

## 4. First-aid measures in case of acute benzene poisoning. —

(a) Remove the clothing immediately if it is wetted with benzene.

(b) If liquid benzene enters the eyes, flush them thoroughly for at least 15 minutes with clean running water and immediately secure medical attention.

(c) In case of unusual exposure to benzene vapour call a physician immediately. Until he arrives, do the following —

(i) If the exposed person is conscious —

(aa) Move him to fresh air in open.

(bb) Lay him down without a pillow and keep him quite and warm.

(ii) If the exposed person is unconscious —

(aa) Lay him down preferably on the left side with the head low.

(bb) Remove any false teeth, chewing-gum, tobacco or other foreign objects which may be in his mouth.

(cc) Provide him artificial respiration in case difficulty is being experienced in breathing.

(dd) In case of shallow breathing or cyanosis (blueness of skin, lips, ears, finger nail beds) he should be provided with medical oxygen or oxygen carbon dioxide mixture. If needed, he should be given artificial respiration. Oxygen should be administered by a trained person only.

## SCHEDULE XXII

## Manufacturing process or operations in carbon disulphide plants

1. *Application.* — This Schedule shall apply to all electric furnaces in which carbon disulphide is generated and all other plants where carbon disulphide after generation, is condensed, refined and stored. This Schedule is in addition to and not in derogation of any of the provisions of the Act and Rules made thereunder.

2. *Construction, installation and operation.* — (1) The buildings in which electric furnaces are installed and carbon disulphide after generation is condensed and refined shall be segregated from other parts of the factory and shall be of open type to ensure optimum ventilation and the plant layout shall be such that only a minimum number of workers are exposed to the risk of any fire or explosion at any one time.

(2) Every electric furnace and every plant in which carbon disulphide is condensed, refined and stored with all their fittings and attachments shall be of good construction, sound material and of adequate strength to sustain the internal pressure to which the furnace or the plant may be subjected to and shall be so designed that carbon disulphide liquid and gas are in closed system during their normal working.

(3) The electric furnace supports shall be firmly grouted about 60 centimetres in concrete or by other effective means.

(4) Every electric furnace shall be installed and operated according to manufacturers' instructions and these instructions shall be clearly imparted to the personnel incharge of construction and operation.

(5) The instructions regarding observance of correct furnace temperature, sulphur dose, admissible current or powder consumption and periodical checking of charcoal level shall be strictly complied with.

3. *Electrodes.* — (1) Where upper ring electrodes made of steel are used in the electric furnace, they shall be of seamless tube construction and shall have arrangement for being connected to cooling water system through a siphon built in the electrodes or through a positive pressure waterpump.

(2) The arrangements for cooling water referred to in sub-paragraph (1) shall be connected with automatic alarm system which will actuate in the event of interruption of cooling water in the elec-

trodes and give visible and audible alarm signals in the control room and simultaneously stop power supply for the furnace operation and to stop the further supply of water. The alarm system and the actuating device shall be checked every day.

4. *Maintenance of charcoal level.* — When any electric furnace is in operation, it shall be ensured that the electrodes are kept covered with charcoal bed.

5. *Charcoal separator.* — A cyclone type of charcoal separator or any other effective arrangement to the satisfaction of the Chief Inspector shall be fitted on the offtake pipe between the electric furnace and sulphur separator to prevent entry of pieces of charcoal into the condensers and piping.

6. *Rupture discs and safety seal.* — (1) At least two rupture discs of adequate size which shall blow off at a pressure twice the maximum operating pressure shall be provided on each furnace and shall either be mounted directly on the top of the furnace or each through an independent pipe as close as possible to the furnace.

(2) A safety water seal shall be provided and tapped from a point between the charcoal separator and the sulphur separator.

7. *Pyrometer and manometers.* — (1) Each electric furnace shall be fitted with adequate number of pyrometers to give an indication of the temperature as correctly as reasonably practicable at various points in the furnace. The dials for reading the temperature shall be located in the control room.

(2) Manometers or any other suitable devices shall be provided for indicating pressure —

(a) in the offtake pipe before and after the sulphur separator; and

(b) in primary and secondary condensers.

8. *Check valves, etc.* — All piping carrying carbon disulphide shall be fitted with check valves, water seals or some other effective devices at suitable positions so as to prevent gas from flowing back into any electric furnace in the event of its shut down.

Overhead, storage tank or tanks of adequate capacity shall be provided to ensure supply of cooling water by direct gravity feed to the condensers in case of emergency such as power shut down, etc. at least for the duration during which it would be possible to initiate and complete the procedures for the shut-down of the furnace.

9. *Inspection and maintenance of electric furnaces.* — (1) Every electric furnace shall be inspected internally by a competent person —

(a) before being placed in service after installation;

(b) before being placed in service after reconstruction or repairs; and

(c) periodically every time the furnace is opened for cleaning or de-ashing or for replacing electrodes.

(2) When an electric furnace is shut down for cleaning or de-ashing —

(a) the brick lining shall be checked for continuity and any part found defective removed;

(d) after removal of any part of the lining referred to in (a) the condition of the shell shall be closely inspected; and

(c) any plates forming shell found corroded to the extent that safety of the furnace is endangered shall be placed.

10. *Maintenance of records.* — The following hourly records shall be maintained in a log book: —

(a) manometer readings at the points specified in sub-paragraph 7(2);

(b) gas temperature indicated by pyrometers and all other vital points near the sulphur separator and primary and secondary condensers;

(c) water temperature and flow of water through the siphon in the electrodes; and

(d) primary and secondary voltages and current and energy consumed.

11. *Electrical apparatus, wiring and fittings.* — All buildings in which carbon disulphide is refined or stored shall be provided with electrical apparatus, wiring and fittings which shall afford adequate protection from fire and explosion.

12. *Prohibition relating to smoking.* — No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in buildings in which carbon disulphide is refined or stored, and a notice in the language understood by a majority of the workers shall be posted in the plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such rooms.

13. *Means of escape.* — Adequate means of escape shall be provided and maintained to enable persons to move to a safe place as quickly as possible in case of an emergency. At least two independent staircases of adequate width shall be provided in every building housing the furnaces at reasonable intervals at opposite ends. These shall always be kept clear of all obstructions and so designed as to afford easy passage.

14. *Warning in case of fire.* — There shall be adequate arrangements for giving warnings in case of fire or explosion which shall operate on electricity and in case of failure of electricity, by some mechanical means.

15. *Fire fighting equipment.* — (1) Adequate number of suitable fire extinguishers or other fire fighting equipment shall be kept in constant readiness for dealing with risks involved and depending on the amount and nature of materials stored.

(2) Clear instructions as to how the extinguishers or other equipment should be used and printed in the language which the majority of the workers employed understand, shall be affixed to each extinguisher or other equipment and the personnel shall be trained in their use.

16. *Bulk sulphur.* — (1) Open or semi-enclosed spaces for storage of bulk sulphur shall be sited with due regard to the dangers which may arise from sparks given off by nearby locomotives, etc. and precautions shall be taken to see that flames, smoking and matches and other sources of ignition do not come in contact with the clouds of dust arising during handling of bulk sulphur.

(2) All enclosures for bulk sulphur shall be of non-combustible construction, adequately ventilated and so designed as to provide a minimum of ledges on which dust may lodge.

(3) The bulk sulphur in the enclosures shall be handled in such a manner as to minimise the formation of dust clouds and no flame, smoking and matches or other sources of ignition shall be employed during handling and non-sparking tools shall be used whenever sulphur is shovelled or otherwise removed by hand.

(4) No repairs involving flames, heat or use of hand or power tools shall be made in the enclosure where bulk sulphur is stored.

17. *Liquid sulphur.* — Open flames, electric sparks and other sources of ignition, including smoking and matches, shall be excluded from the vicinity of molten sulphur.

18. *Training and supervision.* — (1) All electric furnaces and all plants in which carbon disulphide is condensed, refined or stored shall be under adequate supervision at all times while the furnaces and plant are in operation.

(2) Workers in charge of operation and maintenance of electric furnaces and of the plants shall be properly qualified and adequately trained.

19. *Washing facilities.* — (1) The occupier shall provide and maintain in a clean state and in good repair, for the use of all persons employed wash place under cover with at least one tap or stand-pipe, having a constant supply of clean water for every five such persons, the taps or stand-pipes being spaced not less than 120 centimetres, apart with a sufficient supply of soap and clean towels, provided that towels shall be supplied to each individual worker if so ordered by the Inspector.

(2) All the workers employed in the sulphur storage, handling and melting operations shall be provided with a nail brush.

20. *Personal protective equipment.* — (1) Suitable goggles and protective clothing consisting of overalls without pockets, gloves and foot-wear shall be provided for the use of operators —

(a) when operating valves or cocks controlling fluids, etc.;

(b) drawing off of molten sulphur from sulphur pots; and

(c) handling charcoal or sulphur.

(2) Suitable respiratory protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.

(3) Arrangements shall be made for proper and efficient cleaning of all such protective equipment.

21. *Cloakrooms.* — There shall be provided and maintained for the use of all persons employed in the processes a suitable cloakroom for clothing put off during work hours and a suitable place separate from the cloakroom for the storage of overalls or working clothes. The accommodation so provided shall be placed in the charge of a responsible person and shall be kept clean.

22. *Unauthorised persons.* — Only maintenance and repair personnel, persons directly connected with the plant operation and those accompanied by authorised persons shall be admitted into the plant.

### SCHEDULE XXIII

#### Manufacture or manipulation of carcinogenic dye intermediates

1. *Application.* — This Schedule shall apply in respect of all factories or any part thereof where processes in which the substances mentioned in paragraph 3 and 4 are formed, manufactured, handled, or used and the processes incidental thereto in the course of which these substances are formed, are carried on. The processes indicated in this paragraph shall be referred to hereinafter as "the said processes", and such a reference shall mean any or all the processes described in this paragraph.

2. *Definition.* — For the purpose of this Schedule the following definitions shall apply, unless the context otherwise requires —

(a) "controlled substances" means chemical substances mentioned in paragraph 4 of this Schedule;

(b) "first employment" means first employment in the said processes and also re-employment in such processes following any cessation of employment for a continuous period exceeding three calendar months;

(c) "efficient exhaust draught" means localised ventilation effected by mechanical means for the removal of gas, vapour, dust or fume so as to prevent them from escaping into the air of any place in which work is carried on. No draught, shall be deemed to be efficient which fails to remove smoke generated at the point where such gas, vapour, fume or dust originates; and

(d) "prohibited substances" means chemical substances mentioned in paragraph 3 of this Schedule.

3. *Prohibited substances.* — For the purpose of this Schedule, the following chemical substances shall be classified as "prohibited substances" except when these substances are present or are formed as a by-product of a chemical reaction in a total concentration not exceeding one per cent —

(a) beta-naphthylamine and its salts;

(b) benzidine and its salts;

(c) 4-amino diphenyl and its salts;

(d) 4-nitro diphenyl and its salts; and

(e) any substance containing any of these compounds.



4. *Controlled substances.* — For the purpose of this Schedule, the following chemical substances shall be classified as "controlled substances" —

(a) alpha-naphthylamine or alpha-naphthylamine containing not more than one per cent of beta-naphthylamine either as a by-product of chemical reaction or otherwise, and its salts;

(b) ortho-tolidine and its salts;

(c) dianisidine and its salts;

(d) dichlorobenzidine and its salts;

(e) auramine; and

(f) magneta.

5. *Prohibition of employment.* — No person shall be employed in the said processes in any factory in which any prohibited substance is formed, manufactured, processed, handled or used except as exempted by the Chief Inspector as stipulated in paragraph 23.

6. *Requirements for processing or handling controlled substances.* — (1) Wherever any of the controlled substances referred to in paragraph 4 are formed, manufactured, processed, handled or used, all practical steps shall be taken to prevent inhalation, ingestion or absorption of the said controlled substance by the works while engaged in processing that substance, and its storage or transport within the plant, or in cleaning or maintenance of the concerned equipment, plant, machinery and storage areas.

(2) As far as possible all operation shall be carried out in a totally enclosed system. Wherever such enclosure is not possible, efficient exhaust draught shall be applied at the point where the controlled substances are likely to escape into the atmosphere during the process.

(3) The controlled substances shall be received in the factory in tightly closed containers and shall be kept so except when these substances are in process or in use. The controlled substances shall leave the factory only in tightly closed containers of appropriate type. All the containers shall be plainly labelled to indicate the contents.

7. *Personal protective equipment.* — (1) the following items of personal protective equipment shall be provided and issued to every worker employed in the said processes —

(a) long trousers and shirts or overalls with full sleeves and head coverings. The shirt or overall shall cover the neck completely; and

(b) rubber gum-boots.

(2) The following items of personal protective equipment shall be provided in sufficient numbers for use by workers employed in the said processes when there is danger of injury during the performance of normal duties or in the event of emergency —

(a) rubber hand-gloves;

(b) rubber aprons; and

(c) airline respirators or other suitable respiratory protective equipment.

(3) It shall be the responsibility of the manager to maintain all items of personal protective equipment in a clean and hygienic condition and in good repair.

8. *Prohibition relating to employment of women and young persons* — No woman or person below 18 years shall be employed or permitted to work in any room in which the said processes are carried on.

9. *Floors of workroom.* — The floor of every workroom in which the said processes are carried on shall be —

(a) smooth and impervious to water provided that asphalt or tar shall not be used in the composition of the floor,

(b) maintained in a state of good repair,

(c) with a suitable slope for easy draining and provided with gutters and

(d) thoroughly washed daily with the drain water being led into a sewer through a closed channel.

10. *Disposal of empty containers.* — Empty containers used for holding controlled substances shall be thoroughly cleaned of their contents and treated with a deactivating agent before being discarded.

11. *Manual handling.* — Controlled substances shall not be allowed to be mixed, filled, emptied or handled except by means of a scoop with a handle. Such scoop shall be thoroughly cleaned daily.

12. *Instructions regarding risk.* — Every worker on his first employment in the said processes shall be fully instructed about the properties of the toxic chemicals to which he is likely to be exposed to, of the dangers involved and the precautions to be taken. Workers shall also be instructed on the measures to be taken to deal with an emergency.

13. *Cautionary placards.* — Cautionary placards in the form specified in appendix attached to this Schedule and printed in the language of the majority of the workers employed in the said processes shall be affixed in prominent places frequented by them in the factory, where the placards can be easily and conveniently read. Arrangements shall be made by the manager to instruct periodically all such workers regarding the precautions contained in the cautionary placards.

14. *Obligations of the workers.* — It shall be the duty of the persons employed in the said processes to submit themselves for the medical examination including exfoliative cytology of urinary system by the Certifying Surgeon or the qualified medical practitioner as provided for under these rules.

15. *Washing and bathing facilities.* — (1) The following washing and bathing facilities shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the said processes —

(a) a wash place under cover having constant supply of water and provided with clean towels, soap and nail brushes and with at least one stand pipe for every five such workers;

(b) 50 per cent of the stand pipes provided under clause (a) shall be located in bathrooms where both hot and cold water shall be made available during the working hours of the factory and for one hour thereafter;

(c) the washing and bathing facilities shall be in close proximity of the area housing the said processes;

(d) clean towels shall be provided individually to each worker; and

(e) in addition to the taps mentioned under clause (a), one stand pipe, in which warm water is made available, shall be provided on each floor.

(2) Arrangement shall be made to wash factory uniforms and other work clothes everyday.

16. *Food, drink, etc. prohibited in workroom.* — No worker shall consume food, drink, pan, supari or tobacco or shall smoke in any workroom in which the said processes are carried on and no worker shall remain in any such room during intervals for meals or rest.

17. *Cloakroom.* — There shall be provided and maintained in a clean state and in good repair for the use of the workers employed in the said process.

(a) a cloakroom with lockers having two compartments — one for street clothes and the other for work clothes; and

(b) a place separate from the locker room and the messroom, for the storage of protective equipment provided under paragraph 7.

The accommodation so provided shall be under the care of a responsible person and shall be kept clean.

18. *Messroom.* — There shall be provided and maintained for the use of workers employed in the said processes who remain on the premises during the meal intervals, a messroom which shall be furnished with tables and benches and provided with suitable means for warming food.

19. *Time allowed for washing.* — Before the end of each shift 30 minutes shall be allowed for bathing for each worker who is employed in the said processes. Further, at least 10 minutes shall be allowed for washing before each meal in addition to the regular time allowed for meals.

20. *Restriction on age of persons employed.* — No worker under the age of 40 years shall be engaged in the factory in the said processes for the first time after the date on which this Schedule comes into force.

21. *Medical examination.* — (1) Every worker employed in the said processes shall be examined by a Certifying Surgeon within 14 days of his first employment. Such examination shall include tests which the Certifying Surgeon may consider appropriate and shall include exfoliative cytology of the urinary system. No worker shall be allowed to work after 14 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every six calendar months. Such examination shall include tests which the Certifying Surgeon may consider appropriate but shall include exfoliative cytology of the urinary system.

(3) A person medically examined under sub-paragraph (1) shall be granted by the Certifying Surgeon a certificate of fitness in Form 30. Record of each re-examination carried out under sub-paragraph (2) shall be entered in the certificate. The certificate shall be kept in the custody of the manager of the factory.

(4) The record of each examination carried out as referred to in sub-paragraph (1) and (2) including the nature and the results of the tests shall be entered by the Certifying Surgeon in a health register in Form 31.

(5) The certificate of fitness and the health register shall be kept readily available for inspection by any Inspector.

(6) If at any time the Certifying Surgeon is of the opinion that a person is no longer fit for employment in the said processes or in any other work on the ground that continuance therein would involve damage to his health he shall make a record of his findings in the said certificate and also in the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes or in any work as the case may be.

(7) No person who has been found unfit to work as said in sub-paragraph (6), shall be re-employed or permitted to work unless the Certifying Surgeon, after further examination, again certifies him to be fit for employment.

22. *Medical facilities.* — (1) The occupier of every factory in which the said processes are carried on shall engage a qualified medical practitioner for medical surveillance of the workers employed in such processes. His appointment shall be subject to approval of the Chief Inspector.

(2) The occupier shall provide to him all the necessary facilities for the purpose referred to in sub-paragraph (1).

(3) A record of medical examinations and appropriate tests carried out by the qualified medical practitioner shall be maintained in a form approved by the Chief Inspector.

23. *Exemptions-prohibited substances.* — (1) The Chief Inspector may by a certificate in writing (which he may at his discretion revoke at any time), subject to such conditions, if any, as may be specified therein, exempt any process in the course of which any of the prohibited substances is formed, processed, manufactured, handled or used, from the provisions of paragraph 5 if he is satisfied that the process is carried out in a totally enclosed and hermetically sealed system in such a manner that the prohibited substance is not removed from the system except in quantities no greater than that required for the purpose of control of the process or such purposes as is necessary to ensure that the product is free from any of the prohibited substances.

(2) The Chief Inspector may allow the manufacture, handling or use of benzidine hydrochloride provided that all the processes in connection with it are carried out in a totally enclosed system in such a manner that no prohibited substance other than benzidine hydrochloride is removed therefrom except in quantities no greater than that required for the purpose of control of the processes or for such purposes as is necessary to ensure that the product is free from prohibited substances and that adequate steps are taken to ensure that benzidine hydrochloride except when not in a totally enclosed system, is kept wet with not less than one part of water to two parts of benzidine hydrochloride at all times.

24. *Exemptions-general.* — If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this Schedule is not necessary for the protection of the workers in the factory, the Chief Inspector may by a certificate in writing (which he may in his discretion revoke at any time), exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

## APPENDIX

### CAUTIONARY PLACARD/NOTICE

#### Carcinogenic dye intermediates

1. Dye intermediates which are nitro-amino derivatives or aromatic hydrocarbons are toxic. You may be required to handle these chemicals frequently in this factory.
2. Use the various items of protective wear to safeguard your own health.
3. Maintain scrupulous cleanliness at all times. Thoroughly wash your hands and feet before taking meals. It is essential to take a bath before leaving the factory.
4. Wash off any chemical falling on your body with soap and water. If splashed with a solution of the chemical, remove the contaminated clothing immediately. These chemicals are known to produce cyanosis. Contact the medical officer or appointed doctor immediately and get his advice.
5. Handle the dye intermediates only with long handled scoops, and never with bare hands.
6. Alcoholic drinks should be avoided as they enhance the risk of poisoning by the chemicals.
7. Keep your food and drinks away from work place. Consuming food, drinks or tobacco in any form at the place of work is prohibited.
8. Serious effects of the contact with toxic chemicals may result after many years. Great care must be taken to maintain absolute cleanliness of body, clothes, machinery and equipment.

## SCHEDULE XXIV

### Operations involving high noise levels

1. *Application.* — This Schedule shall apply to all operations in any manufacturing process having high noise level.

2. *Definitions.* — For the purpose of this Schedule —

(a) "noise" means any unwanted sound;

(b) "high noise level" means any noise level which, measured on the A-weighted scale, is 90 dB or above.

(c) "decibel" means one-tenth of "Bel" which is the fundamental division of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of "Bels" denoting such a ratio being the logarithm to the base of 10 of this ratio. The noise level (or the sound pressure level) corresponds to a reference pressure of  $20 \times 10^{-6}$  newtons per square metre or 0.0002 dynes per square centimetre which is the threshold of hearing, that is, the lowest sound pressure level necessary to produce the sensation of hearing in average healthy listeners. The decibel in abbreviation form is dB.

(d) "frequency" is the rate of pressure variations expressed in cycles per second or hertz.

(e) "dBA" refers to sound level in decibels as measured on a sound level meter operating on the A-weighting net work with slow meter response.

(f) "A-weighting" means making graded adjustments in the intensities of sound of various frequencies for the purpose of noise measurement, so that the sound pressure level measures by an instrument reflects the actual response of the human ear to the sound measured.

3. *Protection against noise.* — (1) In every factory, suitable engineering control or administrative measures shall be taken to ensure, so far as is reasonably practicable that no worker is exposed to sound levels exceeding the maximum permissible noise exposure levels specified in Tables 1 and 2.

TABLE 1

Permissible exposure in cases of continuous noise

Total time of exposure (continuous or a number of short term exposures) per day, in hours	Sound pressure level in dBA
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
¾	107
½	110
¼	115

NOTES: 1. No exposure in excess of 115 dBA is to be permitted.

2. For any period of exposure falling in between any figure and the next higher or lower figure as indicated in column 1, the permissible sound pressure level is to be determined by extrapolation on a proportionate basis.

TABLE 2

## Permissible exposure levels of impulsive or impact noise

Peak sound pressure level in dB	Permitted number of impulses or impacts per day
140	100
135	315
130	1,000
125	3,160
120	10,000

NOTES: 1. No exposure in excess of 140 dB peak sound pressure level is permitted.

2. For any peak sound pressure level falling in between any figure and the next higher or lower figure as indicated in column 1, the permitted number of impulses or impacts per day is to be determined by extrapolation on a proportionate basis.

(2) For the purposes of this Schedule, if the variations in the noise level involve maxima at intervals of one second or less, the noise is to be considered as a continuous one and the criteria given in Table 1 would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in Table 2 would apply.

(3) When the daily noise exposure is composed of two or more periods of noise exposure at different levels their combined effect should be considered, rather than the individual effect of each. The mixed exposure should be considered to exceed the limit value if the sum of the fractions  $C_1$   $C_2$  ...  $C_n$  exceeds unity —

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \dots + \frac{C_n}{T_n}$$

Where the  $C_1$ ,  $C_2$ , etc. indicate the total time of actual exposure at a specified noise level and  $T_1$ ,  $T_2$ , etc. denote the time of exposure permissible at that level. Noise exposure of less than 90 dBA may be ignored in the above calculation.

(4) Where it is not possible to reduce the noise exposure to the levels specified in sub-rule (1) by reasonably practicable engineering control or administrative measures, the noise exposure shall be reduced to the greatest extent feasible by such control measures, and each worker so exposed shall be provided with suitable ear protectors so as to reduce the exposure to noise to the levels specified in sub-paragraph (1).

(5) Where the ear protectors provided in accordance with sub-paragraph (2) and worn by a worker cannot still attenuate the noise reaching near his ear, as determined by subtracting the attenuation value in dBA of the ear protectors concerned from the measured sound pressure level, to a level permissible under Table 1 or Table 2 as the case may be, the noise exposure period shall be suitably reduced to correspond to the permissible noise exposures specified in sub-paragraph (1).

(6) (a) In all cases where the prevailing sound levels exceed the permissible levels specified in sub-paragraph (1) there shall be administered an effective hearing conservation programme which shall include among other hearing conservation measures, pre-employment and periodical auditory surveys conducted on workers exposed to noise exceeding

the permissible levels, and rehabilitation of such workers either by reducing the exposure to the noise levels or by transferring them to places where noise levels are relatively less or by any other suitable means.

(b) Every worker employed in areas where the noise exceeds the maximum permissible exposure levels specified in sub-paragraph (1) shall be subjected to an auditory examination by a Certifying Surgeon within 14 days of his first employment and thereafter, he shall be re-examined at least once in every 12 months. Such initial and periodical examinations shall include tests which the Certifying Surgeon may consider appropriate, and shall include determination of auditory thresholds for pure tones of 125, 250, 500, 1000, 2000, 4000 and 8000 cycles per second.

## Rule Prescribed under Sections 88 and 88-A:

132. Notification of accidents and dangerous occurrences. — (1) When any accident which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, or any dangerous occurrence specified in the Schedule annexed hereto takes place in a factory, the manager of the factory shall, within four hours of the happening of such accident or occurrence, send a notice thereof by telephone, special messenger or telegram to the Inspector and the Chief Inspector and also to the Administrative Medical Officer, Employees' State Insurance Scheme, Panaji.

(2) When any accident or any dangerous occurrence specified in the Schedule annexed hereto, which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, takes place in the factory, notice as mentioned in sub-rule (1) shall be sent also to:

(a) the District Magistrate or Sub-divisional Magistrate;

(b) the officer-in-charge of the nearest Police Station; and

(c) the relatives of the injured or deceased person.

(3) Any notice given as required under sub-rule (1) and (2) shall be confirmed by the manager of the factory to the authorities mentioned in those sub-rules within 12 hours of the accident or the dangerous occurrence by sending them a written report in Form 32 in the case of an accident or dangerous occurrence causing death or bodily injury to any person and in Form 33 in the case of a dangerous occurrence which has not resulted in any bodily injury to any person.

(4) When any accident or dangerous occurrence specified in the Schedule takes place in a factory and it causes such bodily injury to any person as prevents the person injured from working for a period of 48 hours or more immediately following the accident or the dangerous occurrence, as the case may be, the manager of the factory shall send a report thereof to the Inspector in Form 33 within 24 hours after the expiry of 48 hours from the time of the accident or the dangerous occurrence:

Provided that if in the case of an accident or dangerous occurrence, death occurs of any person injured by such accident or dangerous occurrence

after the notices and reports referred to in the foregoing sub-rules have been sent, the manager of the factory shall forthwith send a notice thereof by telephone, special messenger or telegram and also have this information confirmed in writing within 12 hours of the death to the authorities and persons mentioned in sub-rules (1) and (2):

Provided further that, if the period of disability from working for 48 hours or more referred to in sub-rule (4) does not occur immediately following the accident, or the dangerous occurrence, but later, or occurs in more than one spell, the report referred to in the foregoing sub-rule shall be sent to the Inspector in the prescribed Form 32 within 24 hours immediately following the hour when the actual total period of disability from working and resulting from the accident or the dangerous occurrence becomes 48 hours.

### SCHEDULE

Dangerous occurrences, whether or not they are attended by personal injury or disablement shall include the following: —

1. Bursting of a plant used for containing or supplying steam under pressure greater than atmospheric pressure.
2. Collapse or failure of a crane, derrick, winch, hoist or other appliances used in raising or lowering persons or goods, or any part thereof, or the overturning of a crane.
3. Explosion, fire bursting out, leakage or escape of any molten metal, or hot liquor or gas causing bodily injury to any person or damage to any room or place in which persons are employed, or fire in rooms of cotton pressing factories when a cotton opener is in use.
4. Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas.
5. Collapse or subsidence of any floor, gallery, roof, bridge, tunnel, chimney, wall, building or any other structure.

Rule prescribed under sub-section (1) of Section 89:

**133. Notice of poisoning or disease.** — A notice in Form 34 shall be sent forthwith but not later than four hours to the Chief Inspector, the Certifying Surgeon and the Administrative Medical Officer, Employees' State Insurance Scheme, Panaji, Goa by the manager of a factory in which there occurs a case of lead, phosphorous, mercury, manganese, arsenic, carbon bisulphide or benzene poisoning; or of poisoning by nitrous fumes or by helogens or halogen derivatives of the hydrocarbons of the aliphatic series; or of chrome ulceration, anthrax, silicosis, toxic anaemia, toxic jaundice, primary epitheliomatous cancer of the skin, or of pathological manifestations due to radium or other radio-active substances or X-rays.

## CHAPTER X SUPPLEMENTAL

Rule prescribed under sub-section (1) of Section 107:

**134. Procedure in appeals.** — (1) An appeal presented under Section 107 shall lie with the Chief Inspector, or in cases where the order appealed against is an order passed by that officer, with the Government or with such authority as the Government may appoint in this behalf and shall be in the form of a memorandum setting forth concisely the grounds of objection to the order and bearing court-fees stamp in accordance with Article 11 of Schedule II to the Court-fees Act, 1870, and shall be accompanied by a copy of the order appealed against.

(2) On receipt of the memorandum of appeal, the appellate authority shall, if it thinks fit or if the appellant has requested that the appeal should be heard with the aid of assessors, call upon the body declared under sub-rule (3) to be representative of the industry concerned, to appoint an assessor within a period of 14 days. If an assessor is nominated by such body, the appellate authority shall appoint a second assessor itself. It shall then fix a date for the hearing of the appeal and shall give due notice of such date to the appellant and to the Inspector whose order is appealed against, and shall call upon such date to assist in the hearing of the appeal.

(3) The appellant shall state in the memorandum presented under sub-rule (1) whether he is a member of one or more of the following bodies. The body empowered to appoint the assessor shall —

(a) if the appellant is a member of one of such bodies, be that body;

(b) if he is a member of two such bodies, be the body which the appellant desires should appoint such assessor; and

(c) if the appellant is not a member of any of the aforesaid bodies or if he does not state in the memorandum as to which of such bodies should appoint the assessor, be one of the following bodies which the appellant authority considers as the best fitted to represent the industry concerned, namely:

1. Goa Chamber of Commerce & Industry, Panaji.
2. Goa Small Industries Association, Margao.
3. Other associations of employers in the industry concerned.

(d) An assessor appointed in accordance with the provisions of sub-rules (2) and (3) shall receive, for the hearing of the appeal, a fee to be fixed by the appellate authority, subject to a maximum of rupees seventy five per diem. He shall also receive the actual travelling expenses. The fees and travelling expenses shall be paid to the assessors by the Government, but where assessors have been appointed at the request of the appellant and the appeal has been decided wholly or partly against him the appellate authority may direct that the fees and travelling expenses of the assessors shall be paid in whole or in part by the appellant.

Rule prescribed under sub-section (1) of Section 108:

**135. Display of notices.** — The abstract of the Act and of the rules required to be displayed in every factory shall be in Form 35.

Rule prescribed under Section 110:

**136. Returns.**—The manager of every factory shall furnish to the Inspector or other officer appointed by the Government in this behalf, the following returns in the form and within the due dates specified below —

(a) annual return in Form 36, in duplicate, on or before 31st January of each year;

(b) half-yearly return in Form 37, in duplicate, on or before the 15th July of each year.

(c) before the end of each year, a return giving notice of all the days on which it is intended to close the factory during the next ensuing year. If in any year, a factory is newly started or re-started after its closure during the previous year, such return shall be submitted before the date of such starting or re-starting for the remaining period of the year:

Provided that the Government may dispense with this return in the case of any specified factory or of any class of factories or of the factories in any particular area:

Provided further that the annual return of holidays shall be dispensed with in case of all factories,—

(a) which regularly observe Sundays as holidays; or

(b) which regularly observe a fixed day in the week as a holiday; or

(c) which observe holidays according to a list approved by the Chief Inspector;

Where the manager of any factory makes any departure from such a holiday or list of holidays as aforesaid, prior intimation shall be given to the Chief Inspector.

(d) Annual return of accidents in Form 39 on or before the 31st January of the succeeding year.

Rule prescribed under Section 109:

**137. Service of notices.**—The despatch by post under registered cover of any notice or order shall be deemed sufficient service on the occupier, owner or manager of a factory of such notice or order.

Rules prescribed under Section 112:

**138. Permissible levels of certain chemical substances in work environment.**—Without prejudice to the requirements in any other provisions in the Act or the Rules, the requirements specified in this Schedule shall apply to all factories.

### SCHEDULE

**1. Definitions.**—For the purpose of this Schedule —

(a) “mg/m<sup>3</sup>” means milligrams of a substance per cubic metre of air;

(b) “mppcm” means million particles of a substance per cubic metre of air;

(c) “ppm” means parts of vapour or gas per million parts of air by volume at 25°C and 760 m of mercury pressure;

(d) “time weighted average concentration” means the average concentration of a substance in the air at any work location in a factory computed from evaluation of adequate number of air samples taken at that location, spread over the entire shift on any day, after giving weightage to the duration for which each such sample is collected and the concentration prevailing at the time of taking the sample.

$$\text{Time weighted average concentration} = \frac{C_1 T_1 + C_2 T_2 + \dots C_n T_n}{T_1 + T_2 + \dots T_n}$$

Where  $C_1$  represents the concentration of substance for duration  $T_1$  (in hours);

$C_2$  represents the concentration of the substance for duration  $T_2$  (in hours); and

$C_n$  represents the concentration of the substance for duration  $T_n$  (in hours).

(e) “work location” means a location in a factory at which a worker works or may be required to work at any time during any shift on any day.

**2. Limits of concentrations of substances at work locations.**—(1) The time weighted average concentration of any substance listed in Table 1 or 2 of the Schedule, at any work location in a factory during any shift on any day shall not exceed the limit of the permissible time weighted average concentration specified in respect of that substance:

Provided that in the case of a substance mentioned in Table 1 in respect of which a limit in terms of short term maximum concentration is indicated, the concentration of such a substance may exceed the permissible limits of the time weighted average concentration for the substance for short periods not exceeding 15 minutes at a time, subject to the condition that —

(a) such periods during which the concentration exceeds the prescribed time weighted average concentration are restricted to not more than 4 per shift;

(b) the time interval between any two such periods of higher exposure shall not be less than 60 minutes and

(c) at no time the concentration of the substance in the air shall exceed the limit of short term maximum concentration.

(2) In the case of any substance given in Table 3 the concentration of the substance at any work location in a factory at any time during any day shall not exceed the limit of exposure for that substance specified in the table.

(3) In the cases where the word “skin” has been indicated against certain substance mentioned in Tables 1 and 3, appropriate measures shall be taken to prevent absorption through cutaneous routes particularly skin, mucous membranes, and eyes as the limits specified in these Tables are for conditions where the exposure is only through respiratory tract.

(4) (a) In case, the air at any work location contains a mixture of such substances mentioned in



Table 1, 2 or 3, which have similar toxic properties, the time weighted concentration of each of these substances during the shift should be such, that when these time weighted concentration divided by the respective permissible time weighted average concentration specified in the above mentioned tables, and the fractions obtained are added together, the total shall not exceed unity, i. e.

$$\frac{C_1}{L_1} + \frac{C_2}{L_2} + \dots + \frac{C_n}{L_n} \text{ should not exceed unity}$$

When  $C_1, C_2, \dots, C_n$  are the time weighted concentration of toxic substances 1, 2, ..., and  $n$  respectively, determined after measurement at work location; and  $L_1, L_2, \dots, L_n$  are the permissible time weighted average concentration of the toxic substances 1, 2, ..., and  $n$  respectively.

(b) In case the air at any work location contains a mixture of substances, mentioned in Table 1, 2 or 3, and these do not have similar toxic properties, then the time weighted concentration of each of these substances shall not exceed the permissible time weighted average concentration specified in the above mentioned tables, for that particular substance.

(c) The requirement in clause (a) and (b) shall be in addition to the requirements in paragraphs 2(1) and 2(2).

3. *Sampling and evaluation procedures.* — (1) Notwithstanding provisions in any other paragraphs, the sampling and evaluation procedure to be adopted for checking compliance with the provisions in the Schedule shall be as per standard procedures in vogue from time to time.

(2) Notwithstanding the provisions in paragraph 5, the following conditions regarding the sampling and evaluation procedures relevant to checking compliance with the provisions in this Schedule are specified.

(a) For determination of the number of particles per cubic metre in item 1(a) (i) (1) in Table 2, samples are to be collected by standard or midjet impinger and the counts made by light-filled technique.

(b) The percentage of quartz in the 3 formulas given in item 1(a) (i) of Table 2 is to be determined from airborne samples.

(c) For determination of number of fibres as specified in item 2(a) of Table 2, the membrane filter method at  $430 \times$  phase contrast should be used.

(d) Both for determination of concentration and percentage of quartz for use in the formula given in item 1(a) (i) (2) of Table 2, the fraction passing through a size-selector with the following characteristics should only be considered.

Aerodynamic diameter (unit density sphere)	Percentage allowed by size-selector
2.0	90
2.5	75
3.5	50
5.0	25
10.0	0

4. *Power to require assessment of concentration of substances.* — (1) An Inspector may, by an order in writing, direct the occupier or manager of a factory to get before any specified date, the assessment of the time weighted average concentration at any work location of any of the substances mentioned in Table 1, 2 or 3 carried out.

(2) The results of such assessment as well as the method followed for air sampling and analysis for such assessment shall be sent to the Inspector within 3 days from the date of completion of such assessment and also a record of the same shall be kept readily available for inspection by an Inspector.

5. *Exemption.* — If in respect of any factory or a part of a factory, the Chief Inspector is satisfied that, by virtue of the pattern of working time of the workers at different work locations or on account of other circumstances, no worker is exposed, in the air at the work locations, to a substance or substances specified in Tables 1, 2 or 3 to such an extent as is likely to be injurious to his health, he (the Chief Inspector) may by an order in writing, exempt the factory or a part of the factory from the requirements in paragraph 2, subject to such conditions, if any, as he may specify therein.

TABLE 1

Substance	Permissible limits of exposure			
	Time-weighted average concentration		Short-term maximum concentration	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Acetic acid	10	25	15	37
Acrolein	0.1	0.25	0.3	0.8
Aldrin-skin	—	0.25	—	0.75
Ammonia	25	18	35	27
Aniline-skin	2	10	5	20
Anisidine (O-p-isomers)-skin	0.1	0.5	—	—
Arsenic & compounds (as As)	—	0.2	—	—
Benzene	10	30	—	—
Bromine	0.1	0.7	0.3	2
2 Butanone (Methyl ethyl Ketone-MEK)	200	590	300	885
n-Butyl acetate	150	710	200	950
sec/tert. Butyl acetate	200	950	250	1190
Cadmium-dust and salts (as Cd)	—	0.05	—	0.2
Calcium Oxide	—	2	—	—
Carbaryl (Sevin)	—	5	—	10
Carbofuran (Furadan)	—	0.1	—	—
Carbon disulfide-skin	20	60	30	90
Carbon monoxide	50	55	400	440
Carbon tetrachloride-skin	10	65	20	130
Carbonyl chloride (Phosgene)	0.1	0.4	—	—
Chlordane-skin	—	0.5	—	2
Chlorobenzene (mono chlorobenzene)	75	350	—	—
Chlorine	1	3	3	9
bis-Chloromethyl ether	0.001	—	—	—
Chromic acid and chromates (as Cr)	—	0.05	—	—
Chromium, Sel. Chromic, Chromous salts (as Cr)	—	0.5	—	—
Copper fume	—	0.2	—	—
Cotton dust, raw	—	0.2	—	0.6
Cresol, all isomers-skin	5	22	—	—

Substance	Permissible limits of exposure			
	Time-weighted average concentration	Short-term maximum concentration		
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Cyanides, (as CN)-skin	—	5	—	—
Cyanogen	10	20	—	—
DDT (Dichlor-diphenyl-trichloro-ethane)	—	1	—	3
Demeton-skin	0.01	0.1	0.03	0.3
Diazinon-skin	—	0.1	—	0.3
Dibutyl phthalate	—	5	—	10
Dichlorves (DDVP)-skin	0.1	1	0.3	3
Dieldrin-skin	—	0.25	—	0.75
Dinitrobenzene (all isomers)-skin	0.15	1	0.5	3
Dinitrotoluene-skin	—	1.5	—	5
Diphenyl	0.2	1.5	0.6	4
Endosulfan (Thiodan--skin)	—	0.1	—	0.3
Endrin-skin	—	0.1	—	0.3
Ethyl acetate	400	1000	—	—
Ethyl alcohol	1000	1900	—	—
Ethyl emine	10	18	—	—
Flourides (as F)	—	2.5	—	—
Flourine	1	2	2	4
Hydrogen cyanide-skin	10	11	15	16
Hydrogen sulfide	10	15	15	27
Iron oxide fume (Fe <sub>2</sub> O <sub>3</sub> as Fe)	—	5	—	10
Isoamyl acetate	100	525	125	655
Isoamyl alcohol	100	360	125	450
Isobutyl alcohol	50	150	75	225
Lead, inorg. fumes and dusts (as Pb)	—	0.15	—	0.5
Lindane-skin	—	0.5	—	1.5
Malathion-skin	—	10	—	—
Manganese fume (as Mn)	—	1	—	3
Mercury (as Hg)	—	0.05	—	0.15
Mercury (alkyl compounds)-skin (as Hg)	0.001	0.01	0.003	0.03
Methyl alcohol (methanol)-skin	200	260	250	310
Methyl cellosolve-skin (2 methoxy ethanol)	25	80	35	120
Methyl isobutyl ketone-skin	100	410	125	510
Naphthalene	10	50	15	75
Nickel carbonyl (as Ni)	0.05	0.35	—	—
Nitric acid	2	5	4	10
Nitric oxide	25	30	35	45
Nitrobenzene-skin	1	5	2	10
Oil mist-mineral	—	5	—	10
Parathion-skin	—	0.1	—	0.3
Phenol-skin	5	19	10	38
Phorate (thimet)-skin	—	0.05	—	0.2
Phosgene (Carbonyl chloride)	0.1	0.4	—	—
Phosphine	0.3	0.4	1	1
Phosphorous (yellow)	—	0.1	—	0.3
Phosphorous penta-chloride	—	1	—	3
Phosphorous trichloride	0.5	3	—	—
Picric acid-skin	—	0.1	—	0.3
Pyridine	5	15	10	30
Silane (silicon tetra-hydride)	0.5	0.7	1	1.5
Styrene, monomer (phenyl-ethylene)	100	420	125	525
Sulfur dioxide	5	13	—	—
Sulfuric acid	—	1	—	—
Toluene (toluol)-skin	100	375	150	560

Substance	Permissible limits of exposure			
	Time-weighted average concentration	Short-term maximum concentration		
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
o-Toludine	5	22	10	44
Trichloroethylene	100	535	150	800
Vinyl chloride	5	10	—	—
Welding fumes (NOC)	—	5	—	—
Xylene (o-m-p-isomers)-skin	100	435	150	655

TABLE 2

Substance	Permissible time weighted average concentration
1. Silica	
(a) Crystalline	
(i) Quartz	
(1) In terms of dust count	1060 mppcm % Quartz + 10
(2) In terms of respirable dust	10 mg/m <sup>3</sup> % respirable quartz + 2
(3) In terms of total dust	30 mg/m <sup>3</sup> % Quartz + 3
(ii) Cristobalite	Half the limits given against quartz.
(iii) Tridymite	Half the limits given against quartz.
(iv) Silica fused	Same limit as for quartz.
(v) Tripoli	Same limit as in formula in item 2 given against quartz.
(b) Amorphous	705 mppcm.
2. Silicate having less than 1% free silica by weight	
(a) Asbestos — fibres longer than 5 microns	
(i) Amosite	0.5 fibre/cubic centimetre.
(ii) Chrysotile	2 fibres/cubic centimetre.
(iii) Crocidolite	0.2 fibre/cubic centimetre.
(iv) Other form	2 fibres/cubic centimetre.
(b) Mica	705 mppcm.
(c) Mineral wool fibre	10 mg/m <sup>3</sup> .
(d) Perlite	1060 mppcm.
(e) Portland cement	1060 mppcm.
(f) Soap stone	705 mppcm.
(g) Talc (nonabostiform)	705 mppcm.
(h) Talc (fibrous)	Same limit as for asbestos.
(i) Tremolite	Same limit as for asbestos.
3. Coal dust	
(1) For airborne dust having less than 5% silicon dioxide by weight	2 mg/m <sup>3</sup> .
(2) For airborne dust having over 5% silicon dioxide	Same limit as prescribed by formula in item (2) against quartz.

TABLE 3

Substance	Permissible limit of exposure	
	ppm	mg/m <sup>3</sup>
Acetic anhydride	5	20
O-Dichlorobenzene	50	300
Formaldehyde	2	3
Hydrogen Chloride	5	7
Manganese & compounds (as Mn)	—	5
Nitrogen dioxide	5	9
Nitroglycerin-skin	0.2	2
Potassium hydroxide	—	2
Sodium hydroxide	—	2
2, 4, 6-Trinitrotoluene (TNT)	—	0.5

**139. Information required by the Inspector.**— The occupier, owner or manager of a factory shall furnish any information that an Inspector may require for the purpose of satisfying himself whether any provision of the Act has been complied with or whether any order or an inspection has been duly carried out. Any demand by an Inspector for any such information if made during the course of inspection, shall be complied with forthwith if the information is available in the factory, or if made in writing, shall be complied with within seven days on receipt thereof.

**140. Muster-roll.**— (1) The Manager of every factory shall maintain a muster-roll of all the workers employed in the factory in Form 38 showing (a) the name of each worker, (b) the nature of his work, and (c) the daily attendance of the worker.

(2) The muster-roll shall be written up afresh each month and shall be preserved for a period of 3 years from the date of last entry in it:

Provided that if the daily attendance is noted in respect of adults and children workers in the Registers of Workers in Forms 10 and 20, respectively, or the particulars required under sub-rule (1) are noted in any other register, and such registers are preserved for a period of 3 years from the date of last entry in them, a separate muster-roll required under sub-rule (1) need not be maintained.

**141. Register of accidents and dangerous occurrences.**— (1) The manager of every factory shall maintain a register of all accidents and dangerous occurrences which occur in the factory in Form 39 showing the—

- (a) name of injured person (if any);
- (b) date of accident or dangerous occurrence;
- (c) date of report on Form 32 or 33 as the case may be to Inspector;
- (d) nature of accident or dangerous occurrence;
- (e) date of return of injured person to work;
- (f) number of days of absence from work of injured person.

(2) The manager of every factory shall furnish to the Inspector a copy of the entries in Form 39, quarterly, on or before 15th April, 15th July, 15th October and 15th January relating to the quarters ending 31st March, 30th June, 30th September and 31st December, respectively and also before 31st January of each year of the entries for the year preceding as required under sub-rule (d) of rule 136.

**142. Maintenance of Inspection Book.**— (1) The manager of every factory shall maintain a bound inspection book in Form 40 of the size 35 cms × 20 cms. and shall produce it when so required by the Inspector or Certifying Surgeon.

(2) The Inspection Book shall contain at least 180 pages. Every third page thereof shall be consecutively numbered and the other two numbered pages between each two consecutively numbered pages shall have a vertical perforated straight line on the margin side at a margin of 2.54 cms.

(3) In case the Inspection Book containing remarks passed by the Inspector or Certifying Surgeon is lost, the manager of the factory shall forth-

with report in writing the loss of the Inspection Book to the Inspector in charge of the area and immediately open a new Inspection Book.

The manager shall obtain as early as possible copies of all available remarks for the Factory Inspection Office concerned, on payment of necessary typing charges.

**143. Information regarding closure of factories.**—

(1) The occupier and the manager shall be jointly or severally responsible for sending information in duplicate, to the Inspector of any intended closure of the factory or any shift, section or department thereof, immediately after it has been decided to do so, and before the closure takes place, stating—

- (a) the date of intended closure;
- (b) the reasons for closure;
- (c) the number of workers on the muster-roll of the factory on the day the information is sent;
- (d) the number of workers likely to be affected by the closure;
- (e) the probable period of closure:

Provided that in the case of any factory in respect of which Standing Orders settled or certified under the Industrial Employment (Standing Orders) Act, 1946 provides for the display of the notice boards of the factory of notice of the proposed closure of the factory or any shift, section or department thereof, such information to the Inspector shall be given on the date on which such notice is displayed:

Provided further that it shall not be necessary for the occupier or manager to send information of intended closure if the closure is rendered inevitable on account of fire, break-down of machinery, stoppage of power or water supply or any other cause beyond his control.

(2) The occupier and the manager shall be jointly or severally responsible for sending also information in duplicate to the Inspector as soon as the factory or any shift, section or department thereof, is actually closed in the following form, namely:—

Name of factory and full address	Name of Industry	Date of closure	Reasons for closure	Nature of closure whether entire or partial: if partial the shift, section or department closed	Number of workers on the muster roll of factory at the time of closure	Number of workers affected by the closure
1	2	3	4	5	6	7

Class of industry whether (1) Cotton Textile, or (2) Silk Textile or (3) Woollen Textile, or (4) Hosiery, or (5) Engineering, or (6) Miscellaneous, should be stated.

(3) The occupier and the manager shall be jointly or severally responsible for sending also information, in duplicate, to the Inspector as soon as the

factory or any shift, section or department thereof is re-opened in the following form, namely: —

Name of factory and full address	Name of industry	Date of closure	Number of workers affected at the time of closure	Factory or any shift, section or department thereof reopened	Number of workers on muster roll at the time of reopening	Number of workers (i) re-employed, (ii) newly employed
1	2	3	4	5	6	7

Class of industry whether (1) Cotton Textile, or (2) Silk Textile or (3) Woollen Textile, or (4) Hosiery, or (5) Engineering, or (6) Miscellaneous, should be stated.

*Explanation 1.* — For the purpose of this rule, “closure” means the closing of a factory, or any shift, section or department thereof or the total or partial suspension of work (other than work of a temporary nature) by the occupier or manager of the factory, or total or partial refusal by the occupier or manager of the factory to continue to employ persons employed by him where such refusal does not amount to discharge, dismissal or suspension of a worker or workers by way of punishment.

*Explanation 2.* — This rule shall not apply in the case of a closure of any section or department of a factory if such closure does not affect the total number of workers employed in the factory.

144. **Repeal and saving.** — On the date of commencement of these rules, the Goa, Daman and Diu Factories Rules, 1965 shall stand repealed, except as respects things done or omitted to be done.

FORM 1

Prescribed under rule 3

Application for permission to construct, extend or take into use any building as a factory

1. Applicant’s name, calling and address ...
2. Full name and postal address of factory ...
3. Situation of the factory

(a) District ...

(b) Town or village ...

(c) Nearest Police station ...

(d) Nearest railway station or steamer ghat ...
4. Particulars of plant to be installed ...

Signature of applicant

Date:

*Note:* This application shall be accompanied by the following documents:  
(a) a flow chart of the manufacturing process supplemented by a brief description of the process in its various stages;

- (b) Plans, in duplicate, drawn to scale showing: —

(i) the site of the factory and immediate surroundings including adjacent buildings and other structures, roads, drains, etc.; and

(ii) the plan, elevation and necessary cross-sections of the various buildings indicating all relevant details relating to natural lighting, ventilation and means of escape in case of fire. The plans shall also clearly indicate the position of the plant and machinery, aisles and passage-ways; and
- (c) such other particulars as the Chief Inspector may require.

FORM 2

Prescribed under rules 6 and 15

Application for registration and notice of occupation specified in sections 6 and 7

(To be submitted in triplicate)

1. (a) Full name of factory
- (b) Factory licence number if already registered before.
2. (a) Full postal address and situation of factory.
- (b) Full postal address to which communications relating to factory should be sent.
3. Nature of manufacturing process or processes.

(a) Carried on in the factory in the last twelve months (in the case of factories already in existence); and

(b) to be carried on in the factory during the next twelve months (in the case of all factories)

4. Name and values of principal products manufactured during the last twelve months (in the case of factories already in existence).

Name	Value
1. ...	...
2. ...	...
3. ...	...
5. (a) Maximum number of workers proposed to be employed on any one day during the year.
- (b) Maximum number of workers employed on any one day during the last twelve months (in the case of factories already in existence).
- (c) Number of workers to be ordinarily employed in the factory.
6. (a) Nature and total amount of power (H.P.).

(i) installed; or

(ii) proposed to be installed.

- (b) Maximum amount of power (H. P.) proposed to be used.
7. Full name and residential address of the person who shall be the Manager of the factory for the purposes of the Act.
8. Full name and residential address of the occupier that is —
- (a) the proprietor of the factory in case of a private firm or proprietary concern.
- (b) the directors in case of a public limited liability company or firm.
- (c) (i) the managing agent in case where a managing agent is employed.
- (ii) the directors of the above managing agent.
- (d) the shareholders in case of a private company where no managing agent is employed; or
- (e) the chief administrative head in case of a Government or factory run by a local authority or by any statutory corporation or body.
9. Full name and address of the owner of the premises or building (including the precincts thereof) referred to in section 93.
10. In the case of a factory constructed or extended after the date of commencement of these rules.
- (a) reference number and date of approval of the plans for site for old or new buildings and for construction or extension of factory by the Government Chief Inspector, and
- (b) reference number and date of approval of the arrangements, if any, made for the disposal of trade waste and effluents and the name of the authority granting such approval.

11. Amount of fee paid ...
- (i) name of treasury ...
- (ii) date of payment and ...
- (iii) challan number ... (challan to be enclosed)

Signature of occupier

Date:

Signature of Manager

Date:

**Notes:**

1. This form should be completed in ink in block letters or typed.
2. If power is not used at the time of filling up this form, but is introduced later, the fact should be communicated to the Chief Inspector of Factories immediately.
3. If any of the persons named against item 8 is minor, the fact should be clearly stated.
4. In the case of a factory where under the proviso to sub-sections (1) and (2) of section 100, a person has been nominated as the occupier, information required in item 8 should be supplied only in respect of that person.
5. In the case of a factory where a managing agent or agents have been appointed as occupiers under the Indian Companies Act, 1956, information required in item 8 should be supplied only in respect of that person or persons.

**FORM 3**

(see rule 6)

**Application for licence/renewal of licence of a factory for the year .....**

1. Full name of the factory;
2. Full postal address and situation of the factory;
3. Full address to which communication should be carried (where the factory addresses serve the purpose of communication also this information need not be given);
4. Maximum number of workers to be employed on any day during the year;
5. Installed H. P.;
6. (a) Amount of fee paid Rs.  
(b) Treasury receipt number and date;

Date:

Signature of Occupier/Manager of Factory

## FORM 4

Prescribed under rule 7

## Licence to work a factory

Registration number: Fee paid Rs. ...  
 Licence number: Excess/Due Rs. ...

Licence is hereby granted to ... valid only for the premises described below for use as a factory employing not more than ... persons on any one day during the year and using motive power not exceeding ... H. P., subject to the provisions of the Factories Act, 1948, and the Rules made thereunder.

This licence shall remain in force till the 31st day of December, 19 ...

## Description of the Licensed Premises

The Licensed premises shown on plan number ... dated ... are situated in ... and consist of ...

Date:

Place: Chief Inspector of Factories.

## Renewals

See rule 9

Date of Renewal	For worker	For H. P.	Fees Excess/Due	Date of Expiry 31st December	Signature of renewing authority
1	2	3	4	5	6

NE/E

NE/E

E/d

NE = Not exceeding

E = Exceeding

e = excess paid

d = due to be paid.

(Back side of Form 4)

1	2	3	4	5	6
---	---	---	---	---	---

## Amendments

Year when amended	Amended		Date of payment of amendment fee	Additional fee	Date of payment	Signature of the Issuing Authority
	Workers	Installed power capacity in H.P.				

## Transfers

To whom transferred	Year of transfer	Date of payment of transfer fee	Signature of the Issuing Authority

## FORM 5

Prescribed under rule 16

## Notice of change of Manager

- (a) Name of factory  
(b) Current licence number of factory
- Postal address of factory
- Name of the outgoing Manager
- (a) Name of the new Manager  
(b) Residential Address  
(c) Telephone number
- Date of appointment of the new Manager
- Signature of the new Manager

Signature of Occupier

Date: —

## FORM 6

Prescribed under rule 19(2)

## Certificate of Fitness

- |   |   |
|---|---|
| 1. (a) Serial number                                | Serial number   |
| (b) Date:   | Date  |
| 2. Name of person examined                          | I certify that I have personally examined   |
| 3. Father's name                                    | (name) ... son/daughter of ... residing at ...  |
| 4. Sex  | who is desirous of being employed in a factory, and that his/   |
| 5. Residence  | her age, as nearly as can be ascertained from my examination, is ... years, and that he/she is fit for employment in factory as an adult/child. |
| 6. Date of Birth if available and/or certified age. | His/her descriptive marks are   |
| 7. Physical fitness                                 | ...   |
| 8. Descriptive marks                                | ...   |
| 9. Reason for —                                     | (a) refusal of certificate — or ...   |
|   | (b) Certificate being revoked ...   |

Signature or left hand thumb impression of the person examined.

Signature or left hand thumb impression of the person examined.

Initials of certifying Surgeon.

Signature of Certifying Surgeon

Note: — In case of physical disability, the exact details of the cause of the physical disability should be clearly stated.



Prescribed under rule 19(7): Paragraphs 2(e) and 22(2) of Schedule III; Paragraphs 1(e) and 11(2) of Schedule IV; Paragraph 10(2) of Schedule X; Paragraph 11(9) of Schedule XIV; Paragraph 14(3) of XVI; Paragraph 18(4) of Schedule XX; and Paragraph 13(2) of Schedule XXI to rule 131

Name of the Certifying Surgeon:

(a) Shri ..... From ..... to .....

(b) Shri ..... From ..... to .....

(c) Shri ..... From ..... to .....

[illegible]

NOTE: 1. Detailed summary of reasons for transfer or discharge should be stated in column 8.  
2. The result of medical examination should be expressed as fit/unfit/suspended in column 11.

## FORM 9

Prescribed under rule 29

## Record of limewashing, painting, etc.

Distinctive mark or number

Position in Hygrometer department

Year ... Month ...

Readings of Hygrometer

[illegible]

Signature of Manager

**Date:**

Date	Between 7 & 9 a.m.	Between 11 a.m. & 2 p.m. (but not in the rest interval)	Between 4 and 5.30 p.m.	If no humidity insert «none»	Remarks
	Dry bulb	Wet Bulb	Dry Bulb	Wet Bulb	
1st					
2nd					
3rd					
4th					
5th					
6th					
7th					
8th					
9th					
10th					
11th					
12th					
13th					
14th					
15th					
16th					
17th					
18th					
19th					
20th					
21st					
22nd					
23rd					
24th					
25th					
26th					
27th					
28th					
29th					
30th					
31st					

Signature of the person taking the reading

Certified that the above entries are correct.

Signature and designation of the  
person taking the reading.

## FORM 10

Prescribed under rules 61 and 80(1)

## Register of workers employed for work on or near machinery in motion

1. Name of the worker and Designation
2. Serial number as in the register of workers under section 62
3. Father's name
4. Date of birth and age
5. Nature of work
6. Qualifications, if any, or period of services on similar work
7. Date when tight fitting clothing was provided
8. Remarks

I certify that the above mentioned worker whose signature or left hand thumb impression is given below is a properly trained male adult worker who is competent to mount or ship belts, lubricate or do other adjusting operations on the machinery installed in my factory while they are in motion.

Signature or left hand  
thumb impression of  
worker

Signature of occupier

Date:

## FORM 11

Prescribed under rule 65

## Report of examination of hoists and lifts

Occupier (or owner) of premises  
Address

1. (a) Type of hoist or lift and identification number or description ...  
(b) Date of construction or re-construction (if ascertainable) ...
2. Are all parts of the hoist or lift of good mechanical construction, sound material and adequate strength (so far as ascertainable) ...
3. Are the following parts of the hoist or lift properly maintained and in good working order? If not, state what defects have been found.
  - (a) Enclosure of hoistway or liftway ...
  - (b) Landing gates and cage gate(s) ...
  - (c) Interlocks on the landing gates and cage gate(s) ...

- (d) other gate fastenings ...
- (e) Cage and platform and fittings cage guides, buffers, interior of the hoistway or liftway ...
- (f) Overrunning devices ...
- (g) Suspension ropes or chain and their attachments ...
- (h) Safety gear i. e. arrangements for preventing fall of platform or cage brakes ...
- (i) Brakes ...
- (j) Work or spur gearing ...
- (k) Other electrical equipments ...
- (l) Other parts ...

4. What parts (if any) were inaccessible? ...

5. Repairs, renewals or alterations (if any) required and the period within which they should be executed ...

6. Maximum Safe working load subject to repairs, removals or alterations (if any) specified in item 5 ...

7. Other particulars ...

I/We certify that on (date) ..., I/We thoroughly examined this hoist or lift and that the above is a correct report of the result.

Signature ...  
Qualification ...  
Address ...  
Date ...

If employed by a company or association, name and address of the company or association.

## FORM 12

(See rule 67)

## Report of Examination of the lifting machines, ropes and lifting tackles

## PARTICULARS

1. Name of occupier of factory
2. Address of factory
3. Distinguishing number of mark if any and description sufficient to identify the lifting machine, chains, rope or the lifting tackle
4. Date when the lifting machine, chain, rope or lifting tackle was first used in the factory

5. Date of each examination made under section 29(1) (a) (iii) and by whom it was carried out
6. Date and number of the certificate relating to any test and examination made under sub-rule (1) of rule 66 together with the name of the person who issued the certificate
7. Date of annealing or other heat treatment of the chain and lifting tackle carried out under sub-rule (5) of rule 66 and by whom it was carried out
8. Particulars of any defect found at any such examination or after annealing and affecting the safe working load and of the steps taken to remedy such defect

I/We certify that on ..., I/We thoroughly, examined the abovementioned lifting machine/chain/rope/lifting tackle and that the above is a correct report of the result.

Signature ...

Countersignature ...

If employed by a Company or Association give name and address.

Qualification ...

Address ...

Date ...

Date ...

FORM 13

Prescribed under rule 68

#### Report of Examination or Test of Pressure Vessel or Plant

1. Name of occupier (or factory)
2. Situation and address of factory
3. Name, description and distinctive number of pressure vessel or plant
4. Name and address of manufacturer and reference to their test certificate or certificate of competent person
5. Nature of process in which pressure vessel or plant is used
6. Particulars of pressure vessel or plant
  - (a) Date of construction
  - (b) Thickness of walls
  - (c) Date on which the pressure vessel or plant was first taken into use
- (d) Maximum permissible working pressure recommended by the manufacturer
- (e) Design pressure, if known
- (f) Brief history of pressure vessel or plant, indicating whether the examiner has seen the previous report
7. Date of last hydrostatic test (if any) and pressure applied
8. Is the pressure vessel or plant open, or otherwise exposed to weather or to dampness?
9. What parts (if any) were inaccessible?
10. What examination and tests were made? (Specify pressure if hydrostatic test was carried out)
11. Conditions of pressure vessel or plant, (state any defects materially affecting the maximum permissible working pressure or the safe working of the pressure vessel or plant)
12. Are the required fittings and appliances provided in accordance with the rules in force?
13. (a) Are all fittings and appliances properly maintained and in good condition?  
(b) Have the pressure settings, been checked and corrected?
14. (a) Repairs (if any) required  
(b) Period within which the repairs should be executed  
(c) Any other condition which the person making the examination thinks it necessary for securing safe working
15. Maximum permissible working pressure, calculated from dimensions and from the thickness and other data ascertained by the present examination due allowance being made for conditions of working if unusual or exceptionally severe. (State minimum thickness of walls measured during the examination)

External:

Internal:

16. Where repairs affecting the the maximum working pressure are required, state the working pressure —

- (a) Before the expiration of period specified in item 14
- (b) after the expiration of such period if the required repairs have not been completed
- (c) after the completion of the required repairs

17. Other observations

I certify that on (date) ... the pressure vessel or plant described above was thoroughly cleaned and (so far as its construction permits) made accessible for thorough examination and for such tests as were necessary for thorough examination and that on the said date, I thoroughly examined this pressure vessel or plant, including its fittings, and that the above is a true report of my examination.

Signature ...  
Qualification ...  
Address ...  
Date ...

If employed by a company or association, name and address of the company or association.

FORM 14  
Prescribed under rule 81(8)  
Register of Examination of Gasholder

Distinguishing number or letter of gasholder	Particulars of manufacture				Particulars of examination carried out under sub-rules				Particulars of repair			
	Maker's name	Date of manufacture	Number of lifts	Maximum capacity in cubic metres	Pressure thrown by gasholder when full of gas	Method of examination used	Date of examination	Name and designation of the person making this examination	Nature of Repairs	Date of repairs and painting	By whom repairs are carried out	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13

Signature of Occupier or Manager

FORM 15  
Prescribed under rule 81  
Report of Examination of water sealed gasholder

- 1. Name of occupier (or factory).
- 2. Situation and address of factory ...
- 3. Name, description, distinguishing number or letter and type of gasholder.
- 4. Name and address of the manufacturer.
- 5. (a) Number of lifts ...  
(b) Maximum capacity in cubic metres.  
(c) Pressure thrown by holder when full of gas.
- 6. Particulars of gas to be stored in the holder.

- 7. Parts of the gasholders examined by the electronic or other accurate devices or by cutting sample discs and results thereof.
- 8. Particulars as to the condition of —
  - (a) Crown: ...
  - (b) Side sheeting, including grips and cups;
  - (c) guiding mechanism (Roller carriages, rollers, pins, guide rails or ropes).
  - (d) tank; and ...
  - (e) other structure, if any (columns, framing and bracking).
- 9. Particulars as to the position of the lifts at the time of examination.

10. Particulars as to whether the tank and lifts were found sufficiently level for safe working and if not, as to the steps taken to remedy the defect ...
11. Date of examination and by whom it was carried out.
12. Condition of vessel:

(a) External ...

(b) Internal ...
13. (a) Are all fittings and appliances properly maintained and in good condition?

(b) Repairs, if any, required and period within which they should be executed.

(c) Any other condition which the person making the examination thinks it necessary for securing safe working.

14. Other observation ...

I certify that on (date) ... the gasholder described above was thoroughly examined and such of the tests, as were necessary were made on the same day and that the above is a true report of my examination.

Name:

Signature ...

Qualification ...

Address ...

Date ...

If employed by a company or an association, name and address of the company or association.

FORM 16

Prescribed under rule 111

Register of Compensatory Holidays

Serial number	Number in the register of workers	Name	Group or relay number	Number and date of exempting order	Year	Weekly rest days lost due to the exempting order in				Date of compensatory holidays given in				Lost rest days carried to the next year	Remarks
						January to March	April to June	July to September	October to December	January to March	April to June	July to September	October to December		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

FORM 17

Prescribed under rule 113

Overtime Muster Roll for Exempted Workers

Month ending ... 19 ...

Number in the register of adult workers.	Name of exempted worker	Department	Date on which overtime has been worked	Extent of overtime on each occasion	Total overtime hours worked on production in case of piece workers	Normal hours	Normal rate of pay for piecework rate of pay per hour	Overtime rate of pay	Normal earnings	Overtime earnings	Total earnings	Date on which overtime payments made
1	2	3	4	5	6	7	8	9	10	11	12	13

FORM 18

Prescribed under rule 116

Notice of periods of work for adult workers

Name of factory ...

Place ....

District ...

Periods of work	Men												Women												Description of groups		Remarks
	Total Number of Men employed												Total number of women employed												Group letter	Nature of work	
	A			B			C			D			E			F			G			H					
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
Relays																											
On working days																											
From ...																											
To ...																											
From ...																											
To ...																											
From ...																											
To ...																											
On partial working days																											
From ...																											
To ...																											
From ...																											
To ...																											

Date on which this notice is first exhibited. #

Signature of Manager  
Date:

FORM 19

Prescribed under rule 117

Register of Adult Workers

Sr. No.	Name	Residential address	Father's name	Nature of work	Letter of group as in Form 18	Number of relay, if working in shifts	Number and date of certificate if an adolescent		Remarks
							Number of certificate and date	Token number giving reference to the certificate	
1	2	3	4	5	6	7	8	9	10





FORM 22

[illegible]

Separate page shall be allotted to each worker

FORM 23

(See rule 124)

# Leave Book

Part I — Adults

## Part II — Children

Factory ...

Name: ...

Department ...

**Father's Name**

1	Serial No.	
2	Serial No. in the Register of adults/child workers	
3	Date of entry into service	
4	Calendar year of service	
5	Number of days of work performed	Number of days worked during calendar year
6	Number of days of layoff	
7	Number of days of maternity leave with wages	
8	Number of days of leave with wages enjoyed	
9	Total of columns 5 to 8	
10	Balance of Leave with wages from preceding year	Leave with wages to credit
11	leave with wages earned during the year (mentioned in column 4)	
12	Total of column 10 and 11	

(contd.)

FORM 23

[illegible]

The leave book shall be made out separately for each worker on thick bound sheets.

FORM 24

(See rule 129)

Nomination for payment of pay due for period of holidays in the event of death of worker

I hereby nominate Shri ... who is my ... and resides at ... to receive the amount of the balance of my pay due for the period of leave with wages not availed of, in the event of my death before resuming work.

Dated this ... day of ... 19 ... , at

Witnesses:

- 1.
- 2.

Signature or left thumb impression of the worker.

FORM 25

Prescribed under Paragraph 8(1) of Schedule II to rule 131

Special Certificate of Fitness

Serial Number ...

Date ...

I hereby certify that I have personally examined Shri ... son of Shri ... residing at ... who is desirous of being employed as ... in the ... and that his age, as nearly as can be ascertained from my examination, is ... years and that he is, in my opinion, fit for employment in ...

His descriptive marks are:

Signature or left hand thumb impression of the person employed

Signature of Certifying Surgeon.

Date:

I certify that I examined the person mentioned above on	I extend this certificate until	Signature of certifying surgeon	Note of symptoms

FORM 26

Prescribed under Paragraph 9 (2) of Schedule II to rule 131

Health Register

Serial number	Department of works	Name of worker	Age at last birthday	Date of employment on present work	Date of leaving or transfer (with reasons for discharge or transfer)	Nature of job or occupation	Raw material or by products handled	Date of weekly examination with results (fit/unfit)	Nature of symptoms	Signature of registered medical practitioner
1	2	3	4	5	6	7	8	9	10	11

FORM 27

Prescribed under Paragraph 6(2) of Schedule V to rule 131

Report of Examination and Test of Dust Extraction or Suppression System

1. Description of system

2. Hood —

- (a) Serial number of hood
- (b) Contaminant captured

Design value      Actual value

- (c) Capture velocities (at points to be specified)
- (d) Volume exhausted at hood
- (e) Hood static pressure

3. Total pressure drop at —

- (a) Joints
- (b) Other points of system (to be specified)

4. Transport velocity in duct (at points along ducts to be specified)

5. Air cleaning device —

- (a) Type used
- (b) Velocity at inlet
- (c) Static pressure at inlet
- (d) Velocity at outlet
- (e) Static pressure at outlet

6. Fan —

- (a) Type used
- (b) Volume handled
- (c) Static pressure
- (d) Pressure drop at outlet of fan

7. Fan motor —

- (a) Type
- (b) Speed and power in kilowatts

8. Particulars of defects, if any, disclosed during test in any of the above components

I certify that on (date) ... the above dust extraction system was thoroughly cleaned and (so far as its construction permits) made accessible for thorough examination. I further certify that on the said date, I thoroughly examined the above dust extraction system including its components and fittings and that the above is a true report of my examination.

Signature ...

Qualification ...

Address ...

Date ...

If employed by a company or association, name and address of the company or association ...

FORM 28

Prescribed under Paragraph 12 of Schedule VI, Paragraph 11 of Schedule VIII, Paragraph 10 of Schedule X, Paragraph 17 of Schedule XI and Paragraph 13(2) of Schedule XIX of rule 131

Special Certificate of Fitness

Serial Number:

Date:

I hereby certify that I have personally examined ... son of ... residing at ... who is desirous of being employed as ... in the ... and that his age, as nearly as can be ascertained from my examination, is ... years, and that he is, in my opinion, fit for employment at work involving the use of .... His descriptive marks are:

Signature or left hand thumb impression of person examined

Signature of Certifying Surgeon

Date:

I certify that I examined the person mentioned above on	I extend this certificate until	Signature of Certifying Surgeon	Note of Symptoms of lead poisoning (if any)

FORM 29

Prescribed under Paragraphs 11(1) and (8) of Schedule XIV to rule 131

Certificate of fitness for dangerous operations

1. Serial number ...

2. Name of person examined ...

3. Father's name ...

4. Sex ...

5. Address ...

6. Name of the factory in which employed/in which wishes to be employed ...

7. Process of department in which employed/wishes to be employed ...

8. Whether certificate granted ...

9. Whether declared unfit and certificate refused ...

10. Reference number of previous certificate granted or refused ...

11. Signature or left hand thumb impression of person examined ...
- Serial number ...

I certify that I have personally examined (name) ... son of (father's name) ... residing at (address) ... who is desirous of being employed as ... in (name of factory) ... in (department and process) ... and that as nearly as can be ascertained from my examination, is fit/unfit for employment at the above noted factory.

2. He is fit to be employed and may be employed on some other non-hazardous operation such as ...

3. He may be produced for further examination after a period of ...

4. He is advised following further examination ...

5. He is advised following treatment ...

6. The Serial number of the previous certificate is ...

Signature of Certifying Surgeon ...

Signature or left hand thumb impression of person examined.

Signature of Certifying Surgeon.

- Notes: 1. The counterfoil should be retained by the Certifying Surgeon and maintained in bound book or in a file.
2. The Paragraph which does not apply may be cancelled.

FORM 30

Prescribed under Paragraph 21(3) of Schedule XXIII to rule 131

Certificate of Fitness

Serial number ...

I certify that I have personally examined (name) ... son of (father's name) ... residing at (address) ... who is desirous of being employed as (designation) ... in (process, department and factory) ... and that

his age, as nearly as can be ascertained from my examination, is ... years, and that he is, in my opinion, fit/unfit for employment in the above mentioned factory as mentioned above.

2. He may be produced for further examination after a period of ...

3. The serial number of the previous certificate is ...

Signature or left  
hand thumb im-  
pression of person  
examined.

Signature of Certifying Surgeon.

Date:

<p>I certify that I examined the person mention- ed above on -</p>	<p>I extend this certificate until (if certificate is not extended, the period for which the worker is considered unfit for work is to be mentioned)</p>	<p>Signs and symp- toms observed during exami- nation</p>	<p>Signature of the Certifying Surgeon</p>

## FORM 31

Prescribed under Paragraph 21(4) of  
Schedule XXIII to rule 131

## Health Register

[illegible]

## FORM 32

Prescribed under Rule 132 (3)

**Report of accident or dangerous occurrence  
resulting in death or bodily injury**

E.S.I.C. Employer's Code Number.

**E. S. I. C. Insurance Number  
of the injured  
person.**

1. Name of occupier (or factory)/employer.
2. Address or works/premises where the accident or dangerous occurrence took place.
3. Nature of industry.
4. Branch or department and exact place where the accident or dangerous occurrence took place.
5. Name and address of the injured person.

6. (a) Sex ...  
(b) Age (at the 1st birthday).  
(c) Occupation of the injured person
7. Local E.S.I.C. Office to which the injured person is attached.
8. Date, Shift and hour of accident or dangerous occurrence.
9. (a) Hour at which the injured person started work on the day of accident or dangerous occurrence.  
(b) Whether wages in full or part are payable to him for the day of the accident or dangerous occurrence.
10. (a) Cause or nature of accident or dangerous occurrence.

- (b) If caused by machinery —
- (i) Give the name of machine and the part causing the accident or dangerous occurrence.
  - (ii) State whether it was moved by mechanical power at the time of accident or dangerous occurrence.
- (c) State exactly what the injured person was doing at the time of accident or dangerous occurrence.
- (d) In your opinion, was the injured person at the time of accident or dangerous occurrence.
- (i) acting in contravention of provisions of any law applicable to him; or
  - (ii) acting in contravention of any orders given by or on behalf of his employer; or
  - (iii) acting without instructions from his employer.
- (e) In case reply to (d) (i), (ii) or (iii) is in the affirmative, state whether the act was done for the purpose of and in connection with the employer's trade or business.
11. In case the accident or dangerous occurrence took place while travelling in the employer's transport state whether —
- (a) the injured person was travelling as a passenger to or from his place of work.
  - (b) the injured person was travelling with the express or implied permission of his employer;
  - (c) the transport is being operated by or on behalf of the employer or some other person by whom it is provided in pursuance of arrangements made with the employer and
  - (d) the vehicle is being/not being operated in the ordinary course of public transport service.
12. In case the accident or dangerous occurrence took place while meeting emergency state —
- (a) its nature; and
  - (b) Whether the injured person at the time of accident or dangerous occurrence was employed for the purpose of his employer's trade or business in or about the premises at which the accident or dangerous occurrence took place.
13. Describe briefly how the accident or dangerous occurrence took place.
14. Names and addresses of witnesses. (1)  
(2)
15. (a) Nature and extent of injury (e.g. fatal, loss of finger, fracture of leg, scald, scratch followed by sepsis, etc.)
- (b) Location of injury (e.g., right leg, left hand, left eye, etc.).
16. (a) If the accident or dangerous occurrence not fatal, state whether the injured person was disabled for more than 48 hours.
- (b) Date and hour of return to work.
17. (a) Physician, dispensary or hospital from whom or in which the injured person, received or is receiving treatment.
- (b) Name of dispensary/panel doctor elected by the injured person.
18. (a) Has the injured person died?
- (b) If so, date of death.



I certify that to the best of my knowledge and belief the above particulars are correct in every respect.

Signature of manager/employer

Name, designation and address of manager/employer

Date of despatch of report

(This space is to be completed by the Inspector of Factories)

District ...

Date of receipt:

Number of the accident or dangerous occurrence. Causation.

Other particulars (e.g. fatal, leg injury, arm injury, etc.).

Date of investigation.

Result of investigation.

#### FORM 33

Prescribed under rule 132(3)

Report of dangerous occurrence which does not result in death or bodily injury

1. Name and address of factory.
2. Name of occupier.
3. Name of Manager.
4. Nature of industry.
5. Branch or department and exact place where the dangerous occurrence took place.
6. Date and hour of dangerous occurrence.
7. Nature of dangerous occurrence (State exactly what happened).

I certify that to the best of my knowledge and belief the above particulars are correct in every respect.

Signature of Manager:

Name, designation and address of Manager.

Date of despatch of report.

(To be completed by the Inspector of Factories)

District —

Number of the dangerous occurrence.

Date of investigation.

Result of investigation.

#### FORM 34

Prescribed under rule 133

Notice of poisoning or disease

(see instructions on reverse)

1. Name of factory ...
2. Address of factory ...
3. Address of office or private residence of occupier ...
4. Nature of Industry ...
5. Name and address of the undertaking in which the patient presumes that he was exposed to the risk to which the poisoning or disease is attributed ...
6. Harmful agent or process to which poisoning or disease is attributed ...
7. Name and Work Number of patient ...
9. Sex and age of patient ...
10. Precise occupation of the patient —
  - (a) at the place or last place of employment ...
  - (b) at the undertaking in which the patient presumes that he was exposed to the risk to which poisoning or disease is attributed ...
11. Nature of poisoning or disease from which patient is suffering ...
12. Approximate date of beginning and cessation of exposure of the patient to the harmful agent or process to which poisoning or disease is attributed according to item 6 above ...
13. 1 (Has the case been reported to the Medical Inspector of Factories?)

Signature of Factory Manager ...

Date ...

To be filled in by the Chief Inspector

No. of case ...

Remarks ...

#### \* NOTICE OF POISONING OF DISEASE

Extract from the Factories Act, 1948 (Section 89)

Where any worker in a factory contracts any disease specified in the Schedule, the manager of

the factory shall send a notice thereof to such authorities, and in such form and within such time, as may be prescribed.

#### SCHEDULE

##### List of notifiable diseases

1. Lead poisoning, including poisoning by any preparation of lead or their sequelae.
2. Lead tetra-ethyl poisoning.
3. Phosphorous poisoning or its sequelae.
4. Mercury poisoning or its sequelae.
5. Manganese poisoning or its sequelae.
6. Arsenic poisoning or its sequelae.
7. Poisoning by nitrous fumes.
8. Carbon bisulphide poisoning.
9. Benzene poisoning, including poisoning by any of its homologues, their nitro or amido derivatives or its sequelae.
10. Chrons ulceration or its sequelae.
11. Anthrax.
12. Silicosis.
13. Poisoning by halogens or halogen derivatives of the hydrocarbons of the aliphatic series.
14. Pathological manifestations due to —
  - (a) radium or other radio-active substances; and
  - (b) X-ray.
15. Primary epitheliomatous cancer of skin.
16. Toxic anaemia.
17. Toxic jaundice due to poisonous substances.
18. Oil acne or dermatitis due to mineral oils and compounds containing mineral oil base.
19. Byssinosis.
20. Asbestosis.
21. Occupational or contact dermatitis caused by direct contact with chemical and paints. These are of two types that is, primary irritants and allergic sensitisers.
22. Noise induced hearing loss (exposure to high noise levels).

#### Extract from the Goa, Daman and Diu Factories Rules, 1982 (Rule 133)

A notice in Form 34 should be sent forthwith both to the Chief Inspector and to the Certifying Surgeon, by the manager of a factory in which there occurs a case of lead, phosphorous, mercury, manganese, arsenic, carbon bisulphide or benzene poisoning; or of poisoning by nitrous fumes or by halogens or halogen derivatives of the hydrocarbons of aliphatic series; or of chrome ulceration, anthrax, silicosis, toxic anaemia, toxic jaundice, primary epitheliomatous cancer of skin or of pathological manifestations due to radium or other radio-active substances or X-rays.

#### FORM 35

Prescribed under rule 135

Abstract of the Factories Act, 1948 and the  
Goa, Daman and Diu Factories Rules, 1984

(To be displayed in a conspicuous and convenient place  
at or near the main entrance to the factory)

#### Interpretation

1. "Factory" means any premises including the precincts thereof —

(i) whereon ten or more workers are working, on any day of the preceding twelve months, and in

any part of which manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or

(ii) Whereon twenty or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on.

but does not include a mine subject to the operation of the Mines Act, 1952 (35 of 1952), or a mobile unit belonging to the armed forces of the Union, a railway running shed or a hotel, restaurant or eating place.

*Explanation:* For computing the number of workers for the purposes of this clause all the workers in different relays in a day shall be taken into account.

2. "Worker" means a person employed, directly or through any agency (including a contractor) with or without the knowledge of the principal employer, whether for remuneration or not, in any manufacturing process, or in cleaning any part of the machinery or premises used for manufacturing process, or in any other kind of work incidental to, or connected with, the manufacturing process, or the subject of the manufacturing process; but does not include any member of the armed forces of the Union.

3. "Manufacturing process" means any process for:

(i) making, altering, repairing, ornamenting, finishing, packing, oiling, washing, cleaning, breaking up, demolishing, or otherwise treating or adapting any article or substance with a view to its use, sale, transport, delivery or disposal or

(ii) Pumping oil, water, sewage or any other substances; or

(iii) generating, transforming or transmitting power; or

(iv) composing types of printing, printing by letter press, lithography, photogravure or other similar process or book-binding; or

(v) constructing, reconstructing, repairing, refitting, finishing or breaking up ships or vessels; and

(vi) preserving or storing any article in cold storage.

Working hours, holidays, intervals after rest, etc.

4. *Hours of work for adults (Sections 51 and 54).*— No adult worker shall be required or allowed to work in a factory for more than 48 hours in any week and for more than 9 hours in any day.

5. *Relaxation of hours of work for adults (Section 64).*— The ordinary limits on working hours of adults may be relaxed in certain special cases, e. g., workers engaged on urgent repairs; in work in the nature or preparatory or complementary work which must necessarily be carried on outside the limits laid down for the general working of the factory: in work which is necessarily so intermittent that the intervals during which they do not work while on duty ordinarily amount to more than the intervals for rest; in any work which for technical reasons must be carried on continuously; in making or sup-

plying articles of prime necessity which must be made or supplied every day; in a manufacturing process which cannot be carried on except during seasons, or at times dependent on the irregular action of natural forces; in engine rooms or boiler houses or in attending to power plant or transmission machinery; in the printing of newspapers, who are held up on account of the breakdown of machinery; in the loading or unloading of railway wagons or lorries or trucks; and in any work which is notified by the state Government in the Official Gazette as a work of National importance.

Except in the case of urgent repairs, the relaxation shall not exceed the following limits of work inclusive of overtime:—

- (i) the total number of hours of work in any day shall not exceed ten;
- (ii) the spreadover inclusive of intervals for rest, shall not exceed 12 hours in any one day;
- (iii) the total number of hours of work in a week, including overtime, shall not exceed sixty;
- (iv) the total number of hours of overtime work shall not exceed fifty for any one quarter.

6. *Payment for overtime (section 59).*—Where a worker works in a factory for more than 9 hours in any day or for more than 48 hours in any week, he shall, in respect of overtime work, be entitled to wages at the rate of twice his ordinary rate of wages.

7. *Exemption of supervisory staff (section 64).*—Chapter VI, other than the provisions of clause (b) of sub-section (1) of section 66 and of the proviso to that sub-section, of the Act—working hours of adults—does not apply to persons holding positions of supervision or management or are employed in a confidential position in a factory, provided that where the ordinary rate of wages of such person does not exceed rupees seven hundred and fifty per month, they are entitled to extra wages in respect of overtime work under section 59.

8. *Weekly holiday (adults) (section 52).*—No adult worker shall be required or allowed to work in a factory on the first day of the week, unless—

(a) he has, or will have, a holiday for a whole day on one of the three days immediately before or after the said day, and

(b) the manager of the factory, has, before the said day or the substituted day under clause (a) whichever is earlier,—

(i) delivered a notice at the office of the Inspector of his intention to require the worker to work on the said day and of the day which is to be substituted; and

(ii) displayed a notice to that effect in the factory;

Provided that no substitution shall be made which will result in any worker working for more than ten days consecutively without a holiday for a whole day.

9. *Compensatory holidays (section 53).*—Where a worker in a factory as a result of exemption from the ordinary provision relating to weekly holidays, is deprived of any of the weekly holidays, he shall be allowed, within the month in which the holidays were due to him or within the two months immediately following that month, compensatory holiday of equal number of the holidays so lost.

10. *Intervals for rest for adults (section 55 and 56).*—The periods of work of adult workers in a factory each day shall be so fixed that no period shall exceed 5 hours and that no worker shall work from more than 5 hours before he has had an interval for rest of at least half an hour and that inclusive of his intervals for rest they shall not spread over more than ten and a half hours in any day or, with the permission of the Chief Inspector in writing, 12 hours.

11. *Prohibition of double employment (sections 60, 71 and 99).*—No child or, except in certain circumstances an adult worker, shall be required or allowed to work in any factory on any day on which he has already been working in any other factory.

If a child works in a factory on any day on which he has already been working in another factory, the parent or guardian of the child or the person having custody of or control over him or obtaining any direct benefit from his wages, shall be punishable with fine, which may extend to Rs. 50/- unless it appears to the court that the child so worked without the consent or connivance of such parent, guardian or person.

12. *Prohibition of employment of children under 14 (section 67).*—No child who has not completed his fourteenth year shall be required or allowed to work in any factory.

13. *Hours of work for children (section 71).*—No child shall be employed or permitted to work in any factory for more than four and a half hours in any day and during the period of at least twelve consecutive hours which shall include the interval between 10 p. m. and 6 a. m. The periods of work of all children employed in a factory shall be limited to two shifts which shall not overlap or spread over more than 5 hours each and each child shall be employed in only one of the relays.

The provisions relating to weekly holidays shall also apply to child workers and no exemption from this provision may be granted in respect of any child.

14. *Prohibition of employment of women (section 66).*—No woman shall be required or allowed to work in any factory except between the hours of 6 a. m. and 7 p. m. The state Government may vary these limits or exempt this restriction in case of women working in fish-curing or fish-canning factories.

Leave with wages.

15. *Leave with wages (sections 79, 80 and 83 and rules).*—Every worker who has worked for a period of 240 days or more in a factory during a calendar year shall be allowed during the subsequent calendar

year, leave with wages for a number of days calculated at the rate of —

(i) If an adult, one day for every twenty days of work performed by him during the previous calendar year; and

(ii) If a child, one day for every 15 days of work performed by him during the previous calendar year.

*Explanation:* For the purpose of this sub-section —

(a) any days of lay off, by agreement or contract or as permissible under the standing orders;

(b) in the case of female worker, maternity leave for any number of days not exceeding twelve weeks; and

(c) the leave earned in the year prior to that in which the leave is enjoyed;

shall be deemed to be days on which the worker has worked in a factory for the purpose of computation of the period of 240 days or more, but he shall not earn leave for these days.

*Explanation 2:* The leave admissible under this sub-section shall be exclusive of all holidays whether occurring during or at either end of the period of leave.

For the leave allowed to him, a worker shall be paid at a rate equal to the daily average of his total full-time earnings, for the days on which he actually worked during the month immediately preceding the leave exclusive of any overtime and bonus, but exclusive of dearness allowance and the cash equivalent of the advantage occurring through the concessional sale to the worker of food grains and other articles.

A worker whose service commence on a day other than on the first day of January shall be entitled to leave with wages at the rate indicated above, if he has worked for two-thirds of the total number of days in the remainder of the calendar year.

If a worker is discharged or dismissed from service or quits his employment or is superannuated or dies while in service, during the course of the calendar year, he or his heir or nominees as the case may be, shall be entitled to wages in lieu of the quantum of leave to which he was entitled immediately before his discharge, dismissal, quitting of employment, superannuation or death, calculated at the rates specified above, even if he had not worked for the entire period specified above. Such payment shall be made:

(i) Whether the worker is discharged or dismissed or quits employment, before the expiry of the second working day from the day of such discharge, dismissal or quitting; and

(ii) where the worker is superannuated or dies while in service, before the expiry of two months from the date of such superannuation or death.

If the employment of a worker who is entitled to leave with wages is terminated by the occupier before he has taken the entire leave to which he is

entitled, or if having applied for and having not been granted such leave, the worker quits his employment before he has taken the leave, the occupier of the factory shall pay him the amount payable in respect of the leave not taken, and such payment shall be made before the expiry of the second working day after the day on which his employment is terminated and a worker, who quits his employment on or before the next pay day.

The manager shall maintain a register of leave with wages in the prescribed Form 21 and shall provide each worker with a book called the 'Leave Book' in the prescribed Form 22. The leave book shall be the property of the worker and the manager or his agent shall not demand it except to make entries of the dates of holidays or interruptions in service, and shall not keep it for more than a week at a time. If a worker loses his leave book, the manager shall provide him with another copy on payment of paise 25 and shall complete it from his record.

#### Health

16. *Cleanliness (section 11):* Except in cases specially exempted, all inside walls and partitions, all ceilings or tops of rooms and all walls, sides and tops of passages and staircases in a factory shall be kept whitewashed or colourwashed. The white-washing or colourwashing shall be carried out at least once in every period of fourteen months. The floor of every workroom shall be cleaned at least once in every week by washing, using disinfectant, where necessary, or by some other effective method.

17. *Disposal of wastes and effluents (section 12):* Effective arrangements shall be made in every factory for the treatment of wastes and effluents due to the manufacturing process carried on therein, so as to render them innocuous, and for their disposal.

18. *Ventilation and temperature (section 13):* Effective and suitable provision shall be made in every factory for securing and maintaining in every workroom adequate ventilation by the circulation of fresh air and such a temperature as will secure to the workers therein reasonable conditions of comfort and prevent injury to health.

19. *Overcrowding (section 16):* Unless exemption has been granted there shall be in every workroom of a factory in existence on the date of commencement of this Act at least 9.75 cubic metres and of a factory built after the commencement of this Act at least 13.92 cubic metres of space for every worker employed therein, and for this purpose no account shall be taken of any space which is more than 4.25 metres above the level of the floor of the room.

20. *Lighting (section 17):* In every part of a factory where workers are working or passing, there shall be provided and maintained sufficient and suitable lighting, natural or artificial, or both.

21. *Drinking water (section 18 and rules):* In every factory effective arrangements shall be made to provide and maintain at suitable points conveniently situated for all workers employed therein, a sufficient supply of wholesome drinking water.

In every factory wherein more than 250 workers are ordinarily employed the drinking water shall, during hot weather, be cooled by ice or other effective methods. The cooled drinking water shall be supplied in every canteen, lunchroom and restroom and also at conveniently accessible points throughout the factory.

22. *Latrines and urinals (section 19 and rules)*: In every factory sufficient latrine and urinal accommodation of the prescribed types (separate enclosed accommodation for male and female workers) shall be provided conveniently situated and accessible to workers at all times while they are at the factory. Every latrine shall be under cover and so partitioned off as to secure privacy and shall have a proper door and fastenings. Sweepers shall be employed whose primary duty it would be to keep clean latrines, urinals and washing places.

23. *Spittoons (section 20)*: In every factory, there shall be provided a sufficient number of spittoons of the type prescribed in convenient places and they shall be maintained in a clean and hygienic condition. No person shall spit within the premises of a factory except in the spittoons provided for the purpose. Whoever spits in contravention of this provision shall be punishable with fine not exceeding five rupees.

#### Safety

24. *Fencing of machinery (section 21)*: In every factory dangerous parts of machinery e.g., every moving part of a prime mover and every flywheel connected to a prime mover, etc. etc. shall be securely fenced by safeguards of substantial construction which shall be constantly maintained and kept in position while the parts of machinery they are fencing are in motion or in use.

25. *Work on or near machinery in motion (section 22)*: No woman or young person shall be allowed in any factory to clean, lubricate or adjust any part of a prime mover or any transmission machinery while the prime mover or the transmission machinery is in motion or to clean, lubricate or adjust any part of any machine if the cleaning, lubrication or adjustment thereof would expose the woman or young person to risk of injury from any moving part either of that machine or of any adjacent machinery.

26. *Employment of young persons on dangerous machines (section 23)*: No young person shall work at any machine declared to be dangerous unless he has been fully instructed as to the dangers arising in connection with the machine and the precautions to be observed and has received sufficient training in work at the machine or is under adequate supervision by a person who has a thorough knowledge and experience of the machine.

27. *Casing of new machinery (section 26)*: In all machinery driven by power and installed in any factory after the commencement of this Act, every set screw, bolt or key on any revolving shaft, spindle, wheel or pinion shall be so sunk, encased or otherwise effectively guarded as to prevent danger; all spur, worm and other toothed or friction gearing which does not require frequent adjustment

while in motion shall be completely encased, unless it is so situated as to be as safe as it would be if it were completely encased.

Whoever sells or lets on hire or, as agent of a seller or hirer, causes or procures to be sold or let on hire, for use in a factory any machinery driven by power which does not comply with these provisions or any rules made under this section, shall be punishable with imprisonment for a term which may extend to three months or with fine which may extend to five hundred rupees or with both.

28. *Prohibition of employment of women and children near cotton Openers (section 27)*: No woman or child shall be employed in any part of a factory for pressing cotton in which a cotton opener is at work.

29. *Excessive weights (section 34 and rules)*: No woman or young person shall, unaided by another person, lift, carry, or move by hand or on head, any material, article, tool or appliance exceeding the maximum limit in weight set out in the following Schedule:—

#### SCHEDULE

Persons	Maximum weight of material, article tool or appliance
(a) Adult male	55 kilograms
(b) Adult female	30 kilograms
(c) Adolescent male	30 kilograms
(d) Adolescent female	20 kilograms
(e) Male child	16 kilograms
(f) Female child	14 kilograms

30. *Protection of eyes (section 35 and rules)*: Effective screens or suitable goggles shall be provided for the protection of persons employed in or in the immediate vicinity of processes which involve risk of injury to eyes from particles or fragments thrown off in the course of the processes or which involve risk of injury to eyes by reason of exposure to excessive light or infra-red or ultra-violet radiations.

31. *Precautions in case of fire (section 38 and rules)*: Every factory shall be provided with adequate means of escape in case of fire for the persons employed therein. The doors affording exit from any room shall, unless they are of the sliding type, be constructed to open outwards. Every window, door or other exit affording a means of escape in case of fire, other than the means of exit in ordinary use, shall be distinctively marked. Effective and clearly audible means of giving warning in case of fire to every person employed in the factory shall be provided. Effective measures shall be taken to ensure that wherein more than twenty workers are ordinarily employed in any place above the ground floor, or wherein explosive or highly inflammable materials are used or stored, all the workers are familiar with the means of escape in case of fire and have been adequately trained in the routine to be followed in such case.

#### Welfare

32. *Washing facilities (section 42 and rules)*: In every factory adequate and suitable facilities for

washing shall be provided and maintained for the use of the workers therein. Such facilities shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in a clean and orderly condition.

If female workers are employed separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass.

33. *Facilities for storing and drying clothing (section 43 and rules)*: In the case of certain dangerous operations e. g., lead processes, liming and tanning of raw hides and skins etc. suitable places for keeping clothing not worn during working hours and for the drying of wet clothing shall be provided and maintained.

34. *Facilities for sitting (section 44)*: In every factory suitable arrangements for sitting shall be provided and maintained for all workers obliged to work in a standing position in order that they may take advantage of any opportunities for rest which may occur in the course of their work.

35. *First-aid and ambulance room (section 45)*: In every factory there shall be provided and maintained so as to be readily accessible during all working hours first-aid boxes or cupboards equipped with the prescribed contents. Each first-aid box or cupboard shall be kept in the charge of a separate responsible person who holds a certificate in first-aid treatment recognised by the State Government who shall always be available during the working hours of the factory.

In every factory wherein more than 500 workers are ordinarily employed there shall be provided and maintained an ambulance room of the prescribed size, contained the prescribed equipment, and in the charge of such medical and nursing staff as may be prescribed and those facilities shall always be made readily available during the working hours of the factory.

36. *Canteens (section 46 and rules)*: In specified factories wherein more than 250 workers are ordinarily employed, a canteen or canteens shall be provided and maintained by the occupier for the use of the workers. Food, drink and other items served in the canteen shall be sold on a non-profit basis and the prices charged shall be subject to the approval of a canteen Managing Committee which shall be appointed by the manager and shall consist of an equal number of persons nominated by the occupier and elected by the workers. The number of elected workers shall be in the proportion of 1 for every 1,000 workers employed in the factory, provided that in no case shall there be more than 5 or less than 2 workers on the Committee. The Committee shall be consulted from time to time as to the quality and quantity of food stuffs to be served in the canteen, the arrangement of the menus, etc. etc. Where the canteen is managed by co-operative society, it is not necessary to appoint a canteen Managing Committee and the prices to be charged may include a margin of profit upto a maximum of 5 per cent of its working capital.

37. *Shelters, restrooms and lunchrooms (section 47)*: In every factory wherein more than 150 workers are ordinarily employed, adequate and a suitable lunchroom, with provision for drinking water, where workers can eat meals brought by them, shall be provided and maintained for the use of the workers.

38. *Creches (section 48 and rules)*: In every factory wherein more than 30 women workers are ordinarily employed there shall be provided and maintained a suitable room or rooms for the use of children under the age of six years of such women. The creche shall be adequately furnished and equipped and in particular there shall be one suitable cot or a cradle with the necessary bedding for each child, at least one chair or equivalent seating accommodation for the use of each mother while she is feeding or attending to her child, and a sufficient supply of suitable toys for older children.

There shall be in or adjoining the creche a suitable washroom for the washing of the children and their clothing. An adequate supply of clean clothes, soap and clean towels shall be made available for each child while it is in the creche. At least a quarter litre of clean pure milk shall be available for each child on every day it is accommodated in the creche and the mother of such a child shall be allowed in the course of her daily work suitable intervals to feed the child. For children above two years of age, there shall be provided, in addition, an adequate supply of wholesome refreshment. A suitably fenced and shady open air playground shall also be provided for the older children.

39. *Welfare Officers (section 49)*: In every factory wherein 500 or more workers are ordinarily employed the occupier shall employ in the factory such number of Welfare Officers as may be.

#### Special Provisions

40. *Dangerous operations (section 87 and rules)*: Employment of women adolescents and children is prohibited or restricted in certain operations declared to be dangerous, e. g., electroplating, manufacture and repair of electric accumulators, glass manufacture, grinding or glazing of metals, manufacture and treatment of lead and certain compounds of lead, sandblasting, etc.

41. *Notice of accidents (section 88 and rules)*: When an accident occurs which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, or any dangerous occurrence specified in the Schedule annexed hereto takes place in a factory, the manager of the factory shall forthwith send a notice thereof by telephone, special messenger or telegram to the Inspector and the Chief Inspector. When any accident or any dangerous occurrence specified in the Schedule annexed hereto, which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, takes place in a factory, forthwith notice shall be sent also to the District Magistrate or Sub-divisional Officer to the officer-in-charge of the nearest police station; and to the relatives of the injured or deceased person.

#### SCHEDULE

1. Bursting of a plant used for containing or supplying steam under pressure greater than atmospheric pressure.



2. Collapse or failure of a crane, derrick, winch, hoist or other appliances used in raising or lowering persons or goods, or any part thereof, or the overturning of a crane.
3. Explosion, fire bursting out, leakage or escape of any molten metal, or hot liquor or gas causing bodily injury to any person or damage to any room or place in which persons are employed, or fire in rooms of cotton pressing factories when a cotton opener is in use.
4. Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or solid resulting from the compression of gas.
5. Collapse or subsidence of any floor, gallery, roof, bridge, tunnel, chimney, wall, building or any other structure.

42. *Notice of certain diseases (section 89 and rules):* Where any worker in a factory contracts any of the following diseases, the manager of the factory shall send notice in Form 34 thereof forthwith both to the Chief Inspector and the Certifying Surgeon:

Lead, phosphorous, mercury, manganese, arsenic, carbon bisulphide or benzene poisoning; or poisoning by nitrous fumes or by halogens or halogen derivatives of the hydrocarbons of the aliphatic series; or of chrome ulceration, anthrax, silicosis, toxic anaemia, toxic jaundice, primary epitheliomatous cancer of the skin, or pathological manifestations due to radium or other radio-active substances or x-rays.

43. *No charge for facilities and convenience (section 114):* No fee or charge shall be realised from any worker in respect of any arrangements or facilities to be provided, or any equipments or appliances to be supplied by the occupier under the provisions of this Act.

44. *Powers of Inspectors (sections 9 and 82):* Inspectors have powers to inspect factories any time and may require the production of registers, certificates, etc. prescribed under the Act and the rules.

Any Inspector may institute proceedings on behalf of any workers to recover any sum required to be paid by an employer under the provisions relating to leave with wages, which the employer has not paid.

45. *Obligations of workers (section 97 and 111):* No worker in a factory —

(i) shall wilfully interfere with or misuse any appliance, convenience or other thing provided in a factory for the purposes of securing the health, safety or welfare of the workers therein;

(ii) shall wilfully and without any reasonable cause do anything likely to endanger himself or others; and

(iii) shall wilfully neglect to make use of any appliance or other thing provided in the factory for the purpose of securing the health or safety of the workers therein.

If any worker employed in a factory contravenes any of these provisions or any rule or order made

thereunder he shall be punishable with imprisonment for a term which may extend to three months or with fine which may extend to Rs. 100/- or with both.

If any worker employed in a factory contravenes any provision of this Act or any rules or orders made thereunder, imposing any duty or liability on workers, he shall be punishable with fine which may extend to Rs. 20.

46. *Certificates of fitness (sections 69, 70 and 98):* No child who has completed his fourteenth year or an adolescent shall be required or allowed to work in any factory unless a certificate of fitness granted with reference to him is in the custody of the manager of the factory and such child or adolescent carries, while he is at work, a token giving a reference to such certificate. Any fee payable for such a certificate shall be paid by the occupier and shall not be recoverable from the young person, his parents or guardian.

An adolescent who has been granted a certificate of fitness to work in a factory as an adult and who while at work in a factory carries a token giving reference to the certificate shall be deemed to be a adult for all the purposes of the provisions of the Act relating to the working hours of adults and the employment of Act relating to the working hours of adults and the employment of young persons. An adolescent who has not been granted a certificate of fitness to work in a factory as an adult shall, notwithstanding his age, be deemed to be a child for all the purposes of this Act.

Whoever knowingly uses or attempts to use, as a certificate of fitness granted to himself, a certificate granted to another adolescent to work in a factory as an adult, or who having produced such a certificate knowingly allows it to be used, or an attempt to use to be made, by another person, shall be punishable with imprisonment for a term which may extend to one month or with fine which may extend to Rs. 50/- or with both.

47. *Registers, notices and returns (sections 61, 62, 63, 72, 73, 74 and 110 and rules):* A register of adult workers in the prescribed Form 19 and a register of child workers in the prescribed Form 21 shall be maintained by the manager of every factory.

A notice of periods of work for adults and notice of periods of work for children in the prescribed Forms 18 and 20 shall be correctly maintained and displayed in every factory. No adult worker or child shall be required or allowed to work in any factory otherwise than in accordance with their respective notices of periods of work displayed in the factory.

The owners, occupiers or managers of factories shall submit the prescribed periodical returns to the Inspector regularly.

## FORM 36

Prescribed under rule 136(a)

## Annual Return

For the year ending 31st December, 19...

1. Registration number of factory
2. Name of factory
3. Name of occupier
4. Name of manager
5. Full postal address of factory
6. Nature of industry

## Number of workers and particulars of employment

7. Average number of workers employed daily (see explanatory note) —

- (a) Adults —
  - (i) Men
  - (ii) Women
- (b) Adolescents —
  - (i) Male
  - (ii) Female
- (c) Children —
  - (i) Male
  - (ii) Female

8. Normal hours worked per week (see explanatory note).

- (a) Men:
- (b) Women:
- (c) Children:

9. Number of days worked in the year

10. Total number of manhours worked including overtime:

- (a) Men:
- (b) Women:
- (c) Children:

11. (a) Does the factory carry out any operation declared dangerous under section 87? (See rule ...)
- (b) If so state the types of operation (quote schedule no.)
- (c) State average daily number of workers employed in such dangerous operation(s) (if more than one such operation is involved, give details separately for each operation)

## Leave with wages

12. Total number of workers employed during the year:

- (a) Men:
- (b) Women:
- (c) Children:

13. Number of workers who were entitled to annual leave with wages during the year —

- (a) Men:
- (b) Women:
- (c) Children:

14. Number of workers who were granted leave during the year —

- (a) Men:
- (b) Women:
- (c) Children:

## Number of discharged or dismissed workers

15. (a) Number of workers discharged or dismissed from the service or whose services were terminated during the year

- (b) Number of such workers paid wages in lieu of leave and the total amount of wages paid in lieu of leave

## Compensatory holidays

16. Number of workers exempted from section 52 of the Factories Act —

- Men:
- Women:

17. Number of workers who received holidays in the —

- (a) Same month
- (b) Following month
- (c) Third month

18. Number of canteens providing —

- (a) Cooked food and refreshments
- (b) cooked food only
- (c) refreshments and tea only
- (d) tea only

19. In the canteen run and managed departmentally or through a contractor

20. Please state if a common canteen is being charged with some other factory

21. Approximately average number of workers using daily

22. Item of expenditure borne by the occupier stating separately the total expenditure borne by the occupier in subsidizing sale of food-stuff or in otherwise selling food-stuff below cost price

**Restrooms or shelters and lunchrooms**

23. (a) Number of restrooms or shelters provided  
 (b) Number of lunchrooms provided  
 (c) Approximate average daily attendance of workers at the shelter, restroom or lunchroom

**Creches**

24. Number of creches provided
25. Approximate average daily attendance of children at the creche —  
 (a) 2 years and below  
 (b) above 2 years
26. Details of facilities provided with regard to —  
 (a) Milk  
 (b) Food  
 (c) Clothes  
 (d) Toys  
 (e) Medical Aid  
 (f) Others

27. Details of staff employed —  
 (i) Doctor —  
     (a) Males  
     (b) Females  
 (ii) Nurses  
 (iii) Teachers  
 (iv) Ayahs  
 (v) Sweepers

28. Number of Welfare Officers appointed

**29. Accidents and Safety Officers**

- (a) Total number of accidents (see explanatory note).  
 (i) Fatal  
 (ii) Non-fatal
- (b) Accidents in which workers returned to work during the year to which this return relates  
 (i) Accidents (persons injured) occurring during the year in which injured workers returned to work during the same year  
     (aa) Number of accidents  
     (bb) Men-days lost due to accidents

- (ii) Accidents (persons injured) occurring in the previous year in which injured workers returned to work during the year to which this return relates

(aa) Number of accidents

(bb) Man-days lost due to accidents

- (c) Accidents in which workers did not return to work during the year to which this return relates

(i) No. of accidents

(ii) Man-days lost due to accidents

- (d) Number of Safety Officers appointed

**Suggestion Scheme**

30. (a) Is a suggestion scheme in operation in factory?  
 (b) If so, the number of suggestions —  
     (i) received during the year  
     (ii) accepted during the year  
 (c) Amount awarded in cash prizes during the year  
     (i) Total amount awarded  
     (ii) value of the maximum cash prize awarded  
     (iii) value of the minimum cash prize awarded

Certified that the information furnished above is to the best of my knowledge and belief, correct.

Signature of Manager

Date:

**Explanatory notes:**

1. The average daily number should be calculated by dividing the aggregate number of attendance of working days by the number of working days in the year. In reckoning attendances, attendances by temporary as well as permanent employees should be counted, and all employees should be included, whether they are employed directly or under contractors. Attendances on separate shifts (e.g. night and day shifts) should be counted separately. Days on which the factory was closed for whatever cause, and days on which the manufacturing processes were not carried on should not be treated as working days. Partial attendance for less than half a shift on a

3. Normal hours worked per week means the actual hours worked excluding rest intervals.

**Half yearly return**

For the half-year ending 30th  
June 19 ...

1. Registration number of factory ...
2. Name of factory ...
3. Name of occupier ...
4. Name of Manager ...
5. Postal address of factory
6. Nature of industry ...
7. Average number of workers employed daily (see explanatory note)
  - (a) Adults
    - (i) Men
    - (ii) Women
  - (b) Adolescents
    - (i) Male
    - (ii) Female

5. In item 23(a), the number of accidents which took place during the year should be given. Only those accidents which prevented workmen from working for 48 hours or more, or which were fatal should be included.

- (c) Children
- (i) Male
- (ii) Female

8. Number of days worked during the half-year ending 30th June 19...

Signature of  
Manager

Date \_\_\_\_\_

*Explanatory note:*

The average daily number should be calculated by dividing the aggregate number of attendances on working days by the number of working days during the half-year. In reckoning attendances, attendances by temporary as well as permanent employees should be counted and all employees should be included, whether they are employed directly or under contractors. Attendances on separate shifts (e.g., night and day shifts) should be counted separately. Days on which the factory was closed, for whatever cause, and days on which the manufacturing processes were not carried on should not be treated as working days. Partial attendance for less than half a shift on a working day should be ignored, while attendance for a half a shift of more on such day should be treated as full attendance.

Prescribed under rule 140

### Muster Roll

Name of factory ... Place ... District ...

[illegible]

FORM 39

[Prescribed under rules 136(d) and 141]  
Register of accidents and dangerous occurrences

Name of injured person (if any)	Date of accident or dangerous occurrence	Date of report (in form 32 or 33) to Inspector	Nature of accident or dangerous occurrence	Date of return of injured person to work	Number of days of injured person was absent from work
1	2	3	4	5	6

FORM 40

(See rule 142)

Inspection book containing heading as under:—

Page	Heading
Covering page ...	Inspection Book for Inspectors of Factories and Certifying Surgeon only.
Back of the covering page ...	Manager's remarks regarding action taken, if any.
Every numbered page ...	Inspector's or Certifying Surgeon's remarks.
Back of every numbered page ...	Manager's remarks regarding action taken, if any.

FORM 41

Prescribed under sub-rule (4) of rule 89

Record of Eye Examination

Serial No.	Department/works	Name of worker	Sex	Age (on last birthday)	Occupation		Examination of eye sight		Signature of ophthalmologist	Remarks
					Nature	Date of employment	Date	Result		
1	2	3	4	5	6	7	8	9	10	11

By order and in the name of the Lieutenant Governor of Goa, Daman and Diu.  
Subhash V. Elekar, Under Secretary (Industries and Labour).  
Panaji, 28th May, 1984.